

**UNITED STATES DISTRICT COURT
DISTRICT OF SOUTH CAROLINA
CHARLESTON DIVISION**

UNITED STATES OF AMERICA)	
ex rel. DAVID GRANT,)	
)	
Plaintiff-Relator,)	Civil Action No. 2:15-cv-00794-DCN
)	
v.)	
)	
UNITED AIRLINES, INC.,)	
)	
Defendant.)	
)	
)	

SECOND AMENDED COMPLAINT

TABLE OF CONTENTS

	Page
I. SUMMARY OF THE ACTION	1
II. JURISDICTION AND VENUE	3
III. PARTIES	5
IV. SUBSTANTIVE ALLEGATIONS	6
A. Background on the C-17 and F117 Engine.....	6
B. The Air Force Contracts with Boeing, Pratt & Whitney and United for Full Maintenance Support of the Entire C-17 Fleet	6
1. The Air Force Contracts with Boeing to Maintain the C-17 Fleet	9
2. Boeing Contracts with Pratt & Whitney to Maintain F117 Engines	10
3. Pratt & Whitney Contracts with United to Repair, Overhaul and Test F117s Engine	11
C. United Is Required to Perform Its Work in Accordance with Air Force Technical Orders and Federal Aviation Regulations	15
1. Air Force Technical Orders	15
2. Federal Aviation Regulations	17
D. United Certifies Its Work on Each F117 Engine on Records that United Provides to Its Customers	20
1. Workscopes	21
2. Job Instruction Cards	22
3. Customer Maintenance Tags or “Serviceable” Tags	24
4. Certificates of Conformance	27
5. Field Repair Purchase Orders	28
E. Previous Lawsuits Against United Alleged Similar Misconduct	29
1. <i>United States of America, ex. rel. Douglas R. Niven v. United Air Lines, Inc.</i>	29
2. <i>James v. Pratt & Whitney, et al.</i>	29
F. United Made False Claims for Repairs and Overhauls of F117 Engines in Violation of Its Contract, Air Force Technical Orders, FARs, and Its Own Policies	30
1. United Submitted False Claims by “Pencil Whipping” Repairs.....	30
a. After an Inspector Alerted United that Pieces of a “Large Repair” on a “Core Inlet” Had been “Cracking Off” as if the “Repair Was Not Clean,” United Told the Inspector It “Should Be a Non-Issue”	32

b.	United Falsified a Repair on a Cracked Upper Track Hanger It Retrieved from a Dumpster After It Had Been Scrapped as “Unserviceable”	34
c.	An Inspector Certified His Own Repairs in Violation of the FAA’s “Second Set of Eyes” Rule.....	37
d.	After an Inspector Refused to Sign Off on a Repair, a Mechanic Foreman Signed Anyway	37
2.	United Submitted False Claims for Repairs Performed by Uncalibrated and Uncertified Tools	38
a.	United Falsely Certified Fluorescent Penetrant Inspections Performed without a Calibrated Radiometer	38
(1)	Effective FPI Is Crucial to Aircraft Safety	38
(2)	Air Force Technical Orders Require the Use of a Calibrated FPI Radiometer	40
(3)	United Performed FPIs for Years Without the Required Radiometer.....	46
b.	United Falsely Certified Repairs Performed with Uncalibrated Torque Wrenches	49
c.	United Falsely Certified Repairs Performed with Uncalibrated Swagers and Permaswagers	51
d.	United Falsely Certified Repairs Performed with Uncalibrated Air Ratchets	54
e.	United Falsely Certified Repairs Performed with an Uncalibrated Safety Wire / Safety Cable Gun Calibration Tool....	55
3.	United Allowed Inspectors Whose Training and Eye Exams Had Expired to Continue Certifying Repairs	56
G.	United Retaliated Against the Relator Grant	57
V.	THE FALSE CLAIMS ACT	59
	CLAIMS FOR RELIEF	61
	COUNT I For Violations Of The False Claims Act (31 U.S.C. § 3729(a)(1)(A))	61
	COUNT II For Violations Of The False Claims Act (31 U.S.C. § 3729(a)(1)(B))	61
	COUNT III For Retaliation (31 U.S.C. § 3730(h)(1))	62
	PRAYER FOR RELIEF	62
	JURY TRIAL DEMANDED	64

Plaintiff-Relator David Grant (“Grant”), by and through his undersigned counsel, alleges the following against Defendant United Airlines, Inc. (“United” or the “Company”):

I. SUMMARY OF THE ACTION

1. Plaintiff-Relator Grant, a 28-year United employee and FAA-licensed aviation maintenance technician, brings this *qui tam* lawsuit under the False Claims Act (“FCA”), 31 U.S.C. § 3729 *et seq.*, on behalf of the United States Government against United for the Company’s materially false records and statements concerning United’s repairs, overhauls, and inspections of Pratt & Whitney F117-PW-100 (“F117”) engines and Boeing quick engine change (“QEC”) kits for the U.S. Air Force’s fleet of more than two hundred Boeing C-17 Globemaster III (“C-17”) military cargo jets.

2. Pursuant to a series of subcontracts with Pratt & Whitney and Boeing, United repairs, overhauls, and inspects the F117 engines that exclusively power the C-17. United performs this work at the Module Replacement Center (“MRC”) on the Charleston Air Force Base (“CAFB”). United is the only company in the world that overhauls F117 inlets and core thrust reversers (“CTR”) for the Air Force’s C-17 fleet. The vast majority of these F117 inlets and CTRs are overhauled at the MRC in Charleston; a few are overhauled at United’s other facility in San Francisco.

3. United’s contract requires it to repair F117 engines, inlets, and CTRs to a serviceable condition in accordance with Air Force Technical Orders (“T.O.”) including T.O. 1C-17A-10, which is the official C-17 manual written by Boeing and published under authority of the Secretary of the Air Force. United’s contract also required it to comply with Federal Aviation Regulations (“FAR”) and applicable Pratt & Whitney engine build standards.

4. United’s repair work is documented on a system of standardized forms that track the work that United will perform, and that United has performed, on each F117 engine, inlet,

CTR, or other component. These documents include Workscopes, which detail the repair or overhaul that United will perform on each engine; Job Instruction Cards, which provide step-by-step instructions (citing to sections of Air Force T.O.s) on how United's technicians should perform the repairs and inspections; and Customer Maintenance Tags that are affixed directly onto each engine, inlet, or core thrust reverser that United returns to the Air Force, and which certify that the United's work has performed as instructed and that the part is "serviceable."

5. On several occasions during his employment, Relator Grant has observed United falsifying repairs and inspections in a practice known in the aviation industry as "pencil whipping." Examples of this conduct include certifying a "cracking" repair that was "not clean" as if it was a "non-issue"; falsifying a repair on a cracked part of a CTR that had been scrapped as unserviceable and asking personnel to retrieve it from a dumpster; and falsifying repairs to hide the fact that the same Inspector who performed those repairs was also the one inspecting and certifying those repairs – a violation of FARs.

6. During his employment with United, Relator Grant has observed United personnel certifying repairs performed without the required tools and with uncalibrated and uncertified tools. For example, United performed years of fluorescent penetrant inspections ("FPI") for cracks on F117 engines without the radiometer required by Air Force T.O.s. The use of FPI light meters and radiometers is standard practice in the aviation industry and the Air Force. As the U.S. National Transportation Safety Board observed in an investigation of FPI methods and procedures following the death of two passengers from an engine failure after a "defect in the fan hub was not detected," the "consequences of a missed crack in a critical rotating part" are "potentially catastrophic."

7. United also performed repairs with torque wrenches, air ratchets, swagers, and safety cable guns that were not properly calibrated and indeed were not tracked for calibration through any tool-control or tracking system. As a result, it was literally impossible for United to track when these tools had been last calibrated, if at all.

8. Properly calibrated tools are crucial for safe and effective aircraft repair, particularly for a sophisticated military aircraft like the C-17. For example, T.O. 1C-17A-10 sets forth hundreds of maintenance procedures that specify the precise amount of torque with which to install and uninstall C-17 components – from as little as 20 inch-lbs for delicate components to as much as 675 inch-lbs for heavy engine parts. Hence, United’s violations had substantial implications on the safety of the C-17s it repaired for the Air Force.

9. Two previous lawsuits filed in 2003 by aviation mechanics employed at the Charleston MRC made similar allegations that United had used uncalibrated tools to repair C-17 engines and retaliated against mechanics after they alerted managers to defects and resisted being coerced to pencil whip deficient repairs. One of these lawsuits was a *qui tam* action brought under the FCA in which the United States intervened and reached a settlement agreement with United.

10. In 2012, United promoted Relator Grant to Lead Aviation Maintenance Technician. In 2014, Relator Grant alerted United managers of numerous aircraft maintenance violations committed at the MRC. United began investigating Grant’s allegations and held various meetings. Meanwhile, Grant began cataloguing United’s misconduct. After United managers saw Grant photographing violations and conditions at the MRC, United escorted Grant out of the facility. In May 2014, United terminated Grant from his employment at United.

II. JURISDICTION AND VENUE

11. This action arises under the False Claims Act, 31 U.S.C. § 3729, *et seq.*, and is brought under 31 U.S.C. § 3730.

12. The Court has subject matter jurisdiction over this action pursuant to 31 U.S.C. § 3732 and 28 U.S.C. § 1331 because this action arises under the laws of the United States.

13. The Court also has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§ 1345, 1355 because this action is brought on behalf of the United States and seeks recovery and enforcement of a fine, penalty or forfeiture.

14. This Court has personal jurisdiction over United because United resides and/or transacts business in this District, and committed proscribed acts in this District.

15. Venues is proper in this District pursuant to 31 U.S.C. § 3732(a) because United can be found, resides, and transacts business, and violated 31 U.S.C. § 3729 *et seq.* in this District.

16. There are no bars to recovery under 31 U.S.C. § 3730(e). Specifically, this suit is not based upon prior public disclosures of allegations or transactions in a criminal, civil, or administrative hearing, lawsuit or investigation or in a Government Accounting Office or Auditor General's report, hearing, audit, or investigation, or from the news media. In the alternative, Relator Grant is an original source as defined therein. Relator Grant has direct and independent knowledge of the information on which the allegations are based.¹ Further, substantially the same allegations as those alleged in this suit were not publicly disclosed in a federal criminal, civil, or administrative hearing in which the Government or its agent was a party, or in a congressional, Government Accountability Office, or other Federal report, hearing, audit, or investigation, or from the news media. In the alternative, Relator Grant is an original source as defined therein. Relator has knowledge that is independent of and materially adds to any publicly disclosed

¹ This reflects the relevant language of 31 U.S.C. § 3730(e) prior to amendments on March 23, 2010.

allegations or transactions.² As required pursuant to 31 U.S.C. §§ 3730(b) and (e), Relator Grant has voluntarily provided information, oral and/or written, and has sent disclosure statement(s) of all material evidence, information, and documents related to this action, both before and contemporaneously with filing, to the Attorney General of the United States and the United States Attorney for the District of South Carolina.

III. PARTIES

A. Plaintiff-Relator Grant

17. Plaintiff-Relator Grant was employed by United as an Aviation Maintenance Technician (“AMT”) from January 1986 to May 2014 – approximately 28 years. From 2008 to March 2014, Grant worked for United as an AMT in the Module Replacement Center (“MRC”) at the Charleston Air Force Base (“CAFB”). In 2012, United promoted Grant to Lead Aviation Maintenance Technician. Grant is a resident of Charleston County, South Carolina.

18. Grant is a 1984 graduate of the Aviation Career & Technical Education High School in Long Island City, New York, from which he obtained his FAA airframe license. Grant is a 1985 graduate of the Spartan College of Aeronautics and Technology in Tulsa, Oklahoma, from which he obtained his FAA PowerPlant license. Grant is a 1991 graduate of American Flyers in Islip, New York, from which he obtained his FAA pilot license. Grant is also a 1993 graduate of the School of Communication Electronics in San Francisco, California, from which he obtained his FCC radio repair license with radar endorsement.

19. Grant is the “original source” of the facts alleged in this Complaint as that term is used the False Claims Act.

B. Defendant United Airlines, Inc.

² This reflects the relevant language of 31 U.S.C. § 3730(e) as of this date of this filing.

20. United Airlines, Inc. is a Delaware corporation with its principal executive office at 233 South Wacker Drive, Chicago, Illinois 60606. United operates the MRC at the CAFB in Charleston, South Carolina, which is the only facility in the world that performs full overhauls on C-17/F117 inlets and CTRs.

IV. SUBSTANTIVE ALLEGATIONS

A. Background on the C-17 and F117 Engine

21. The Boeing C-17 Globemaster III is a large military transport aircraft that was developed for the Air Force in the 1980s and 1990s by McDonnell Douglas. After McDonnell Douglas merged with Boeing in the 1990s, Boeing continued to manufacture the C-17.

22. As of 2011, Boeing provided maintenance supported for 211 C-17s for the Air Force.³ Each C-17 is powered by Pratt & Whitney's F117 engines, which are the exclusive power for the C-17.⁴ The Air Force has paid between approximately \$170 and \$218 million per unit for its C-17s. The Air Force has paid approximately \$10 million for each F117 engine.

23. The Air Force uses the C-17 as the primary workhorse to resupply U.S. military bases in Iraq, Afghanistan, and elsewhere. The Secretary of Defense, Secretary of State, and other high-ranking government officials routinely travel abroad aboard C-17s.

B. The Air Force Contracts with Boeing, Pratt & Whitney and United for Full Maintenance Support of the Entire C-17 Fleet

24. According to William C. Williams, Pratt & Whitney's F-117 Flexible Sustainment Manager at the MRC on the CAFB, a "set of contractual relationships" exists among United, Pratt

³ Moore, Lori, *Boeing Awarded Contract for PBL Sustainment of C-17 Globemaster III*, EPN Newswire, (Oct. 11, 2011).

⁴ See https://www.pw.utc.com/Content/Press_Kits/pdf/PrattWhitney_Brochure.pdf.

& Whitney, Boeing, and the Air Force, through which “the maintenance and repair work on the F117 engines conducted at the MRC is performed by United employees”:

As the F117 Flexible Sustainment Manager for Pratt & Whitney, I facilitate the management of Pratt & Whitney's contracts with [Boeing] and [United] at [CAFB]. These contracts are part of a set of contractual relationships regarding the maintenance and repair of the F-117 engines that are used on the C-17 "Globemaster" aircraft within the [Air Force]. In total, there are four different parties involved:

United States Air Force → Boeing Inc. → Pratt & Whitney → United Air Lines, Inc.
(Primary Contract) (Subcontract) (Subcontract)

Under the contract between United and Pratt & Whitney, the maintenance and repair work on the F-117 engines conducted at the MRC is performed by United employees.

The ultimate obligation of this set of contractual relationships requires that the parties keep available a minimum number of spare F-117 engines for the use of the USAF as needed for the C-17 fleet.

... Pratt & Whitney's contractual obligations to Boeing are dependent on United's timely performance of work at the MRC⁵

25. The “New Employee Study Guide for Indoctrination to CHS” for “United Airlines, Charleston Air Force Base/Module Replacement Center for the F117 program” (the “Study Guide”) provides an “Engine Program Overview” of United’s “Responsibilities” related to the “F117 Flexible Sustainment Contract # 150704”:

1. The USAF has ultimate responsibility for F117 Maintenance[.]
2. Boeing has the contract to provide Maintenance for the entire C17 Weapon System including the F117 Engine.

⁵ Affidavit of William C. Williams, ¶ 3, *James v. Pratt & Whitney, et al.*, No. 2:03-1022-18 (D.S.C. Jan. 28, 2004) (ECF No. 39-4).

3. P&W has the contract with Boeing to provide off-wing and some on-wing maintenance of the F117Engine, the equivalent to the commercial PW2000 engine[.]

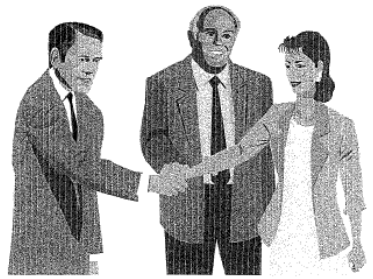
4. United has team[ed] with P&W to provide F117engine maintain. United has a contract with P&W to provide engine and QEC maintenance.

5. The [Charleston Module Replacement Center] is contracted to provide primary repair and management of the F117 QEC⁶

26. The Study Guide depicts United's contractual relationship with Pratt & Whitney, Boeing, and ultimately, the USAF:

The F117 Program

- Air Force
- Boeing
- Pratt & Whitney
- United Airlines



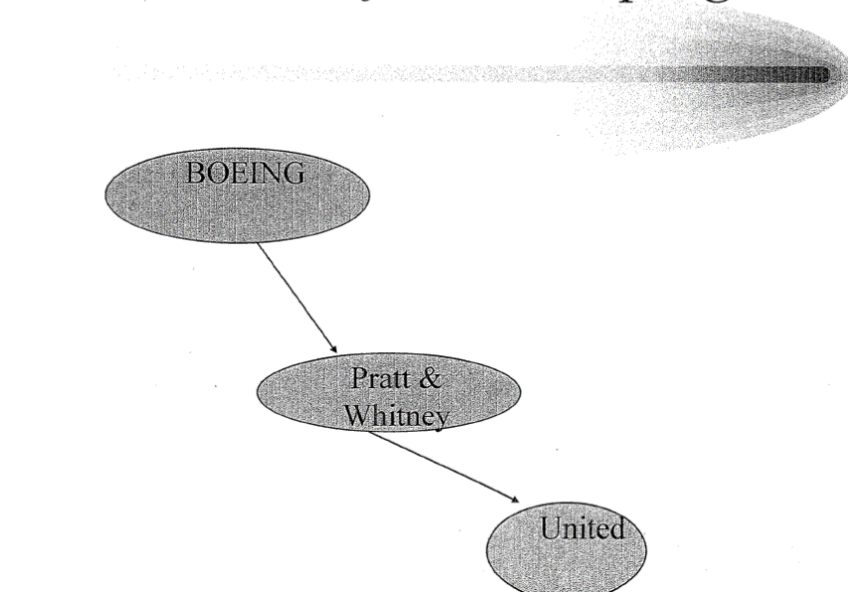
7

27. A document titled "Initial Training for [United] personnel at CHSUS/MM" further depicts United's contractual relationship with the Boeing and Pratt & Whitney:

⁶ Study Guide at 23.

⁷ Trainer Manual at 37.

The ladder of the F117 program



28. According to Louis Chenevert, Executive Vice President of Pratt & Whitney, the Air Force's contracts with Boeing, Pratt & Whitney, and United was "the first time the military has looked to industry for full maintenance support of an entire aircraft system, something traditionally found only in the commercial world ... We are very pleased that Boeing selected us, as the original manufacturer, and our partners at United."⁸

1. The Air Force Contracts with Boeing to Maintain the C-17 Fleet

29. A Settlement Agreement signed by United's Senior Vice President and General Counsel describes the Air Force's contract with Boeing:

Beginning in about 1997, the United States Air Force contracted with McDonnell Douglas Corporation, wholly owned subsidiary of [Boeing], under Contract No. F33657-98-C-0008 ... for Contractor Logistic Support ... to maintain and repair the C-17 fleet of aircraft for fiscal years 1998 through 2000

⁸ "Pratt & Whitney Team Begins First-Of-A-Kind Program for U.S. Air Force and Boeing," Press Release by Pratt & Whitney (Jan. 16, 1998).

On about November 30, 2000, the United States Air Force contracted with Boeing under Contract No. F33657-01-C-2002 ... for CLS to maintain and repair the C-17 fleet of aircraft for fiscal years 2001 through 2005....⁹

30. “Under the contract, Boeing has “Total Systems Support Responsibility” for the C-17 fleet and must meet Air Force sustainment benchmarks. The service measures Boeing’s success primarily on fleet availability -- the average portion of the fleet that is available to fly.”¹⁰

31. Boeing’s contract with the Air Force was renewed in 2011, when the Pentagon approved a 10-year, \$11.75 billion deal with Boeing to continue providing maintenance and support services for C-17 jets across the globe. The contract, an extension of existing agreements, included \$1.6 billion for Fiscal Year 2012 to ensure C-17s remain in the air and are properly maintained. The deal provided the Air Force general maintenance, engine work, logistics, some parts and labor at all bases where the C-17 is stationed.¹¹

2. Boeing Contracts with Pratt & Whitney to Maintain F117 Engines

32. The Settlement Agreement signed by United’s Senior Vice President and General Counsel also describes Boeing’s subcontract with Pratt & Whitney:

Boeing subcontracted maintenance and repair work of the C-17 aircraft engine to United Technologies Corporation, operating through its Pratt & Whitney Large Military Engines division ... under both Contract 0008 and Contract 2002.¹²

⁹ Settlement Agreement, ¶¶ C-D, *Niven v. United Air Lines, Inc.*, No. 2:03-cv-00386=PMD (D.S.C. Apr. 21, 2003) (ECF No. 15).

¹⁰ *Boeing Awarded \$892 Million Option in C-17 sustainment Partnership*, Inside the Air Force (Sept. 3, 2004).

¹¹ Hanson, Kristopher, *Boeing Gets \$11.75B C-17 Maintenance Contract*, Press-Telegram (Oct. 4, 2011).

¹² Settlement Agreement, ¶ E, *Niven v. United Air Lines, Inc.*, No. 2:03-cv-00386=PMD (D.S.C. Apr. 21, 2003) (ECF No. 15).

33. Pratt & Whitney “provides all the technical documentation to ... maintain our aircraft engine products” including Pratt & Whitney’s “military products” such as the “F117” engine, and that “[P&W] publish[es] the engine and maintenance manuals” for these engines.¹³

34. The Inspector General for the United States Department of Defense recently questioned whether the Air Force has been overpaying for F117 engine sustainment by Pratt & Whitney through this contract.¹⁴

3. Pratt & Whitney Contracts with United to Repair, Overhaul and Test F117s Engine

35. The Settlement Agreement signed by United’s Senior Vice President and General Counsel also describes Pratt & Whitney’s contract with United:

On about January 28, 1998, Pratt & Whitney entered into a subcontract with [United] under Contract 0008, for [United] to perform, among other things, work related to the removal and replacement of the Quick Engine Change Kits (“QEC Kit”) for F117-PW-100 engines ... at United’s operations located at Charleston Air Force Base at Charleston, South Carolina ... for fiscal years (“FY”) 1998 through 2000. On about December 31, 2000, Pratt & Whitney and United entered in a new subcontract under Contract 2002 for [United] to continue to perform, among other things, work related to the removal and replacement of engine QEC Kits at United’s operations located at the Charleston Air Force Base for FY 2001 and beyond....

United’s operations at the [CAFB] performed some repairs on the engines, all removal and installation of QEC Kits, and functional test cell runs on engines

¹³ See http://www.pw.utc.com/Specialty_Services.

¹⁴ See U.S. Dept. of Defense, Inspector General. *U.S. Air Force May Be Paying Too Much for F117 Engine Sustainment* (Dec. 22, 2014) (available at http://www.dodig.mil/pubs/report_summary.cfm?id=6118). In particular, the Inspector General concluded: “In commercial, sole-source situations, suppliers may exploit the lack of competitive markets and reasonable prices. In this case, Pratt and Whitney increased its negotiation leverage by refusing to provide critical information that the [Air Force] needed to evaluate the prices for the F117 engine sustainment services labeled as commercial. Without that information, the [Air Force] does not know whether the \$1.54 billion already spent on the [C-17] contract through October 2014 for the F117 engine sustainment services or if the estimated billions of dollars it intends to spend over the next 7 years is a fair and reasonable price.” *Id.*

before the engines were returned to the United States Air Force to be used on the C-17 aircraft.¹⁵

36. A press release issued by United also confirms that “[t]ogether with our partners at United Airlines, we maintain F117 engines for our Air Force customers.”¹⁶

37. A 2002 press release by Pratt and Whitney also confirms that “Pratt & Whitney, working with United Airlines, was selected in December to provide engine overhaul services for the C-17 transport.... This agreement is part of the overall maintenance contract received by Boeing, the plane’s builder, to provide as much as \$5 billion in C-17 maintenance... This is the first time the military has looked to industry for full maintenance support of an entire aircraft system, something traditionally found only in the commercial world,” said Louis Chenevert, executive vice president of Pratt & Whitney.”¹⁷

38. A Study Guide that United provided to all incoming personnel at the MRC on the CAFB describes United’s “contract with Pratt & Whitney and Boeing to perform engine overhaul of the F117-PW-100 engine.” In the Study Guide, United expressly confirms that its “contract with Pratt & Whitney and Boeing to perform engine overhaul of the F117-PW-100 engine” required United to “repair engines to a serviceable condition in accordance to United FAA approved and/or accepted procedures and the P&W build standards” and “in accordance with the T.O. - 1C-17A-10 Powerplant Build Manual.” Specifically, the Study Guide states as follows:

¹⁵ Settlement Agreement, ¶¶ F-G, *Niven v. United Air Lines, Inc.*, No. 2:03-cv-00386=PMD, ECF No. 15 (D.S.C. Apr. 21, 2003).

¹⁶ Tardiff, Laurie, *Pratt & Whitney Delivers 500th F117 Engine for U.S. Air Force C-17 Fleet*, PR Newswire (Dec. 10, 2002).

¹⁷ Sullivan, Mark, *Pratt & Whitney Team Begins First-Of-A-Kind Program for U.S. Air Force and Boeing*, PR Newswire (Jan. 16, 1998).

THE CONTRACT

United Airlines has entered into a contract with Pratt & Whitney and Boeing to perform engine overhaul of the F117-PW-100 engine. United Airlines shall furnish the labor necessary to conduct the disassembly, cleaning, inspection, minor repair, reassemble and testing associated with the overhaul and/or repair of the F117 engine and components installed on the Air Force's C-17 aircraft. The engines will be built-up in an engine build up (EBU) powerplant and configuration, tested and ready for immediate installation and use on the C-17 aircraft.

The services shall consist of the labor to overhaul and/or repair engines to a serviceable condition in accordance to United FAA approved and/or accepted procedures and the P&W build standards. [United] will conduct these activities at the Module Replacement Center (MRC) at the Charleston Air Force Base (CAFB). Specific task[s] include, but are not limited to: QEC removable/installation, module and component removal, disassembly, minor repairs (i.e., Blade Blending), reassemble, installation, necessary testing, adjustments, receiving inspection and packaging for shipment. ***QEC removal and installation shall be in accordance with the T.O. - 1C-17A-10 Powerplant Build Manual.***¹⁸

(Emphases added).

39. The Study Guide describes United's "Mission Statement" for its work on the F117 engine at the Charleston Air Force Base:

The mission for United Airlines will be to provide quality work on the F117-PW-100 engine overhaul program for its' team of valued customers: The United States Air Force; Boeing; and Pratt & Whitney; at the Charleston Air Force Base and the other stations while providing support for the C-17 aircraft fleet. This work will include repair, inspection, adjustments, and testing at the highest standard while remaining focused on the customer's needs and requirements.¹⁹

¹⁸ Study Guide at 2 (emphases added). Because Boeing manufactured the C-17 and Pratt & Whitney manufactured the F117 engine, United technicians were instructed to "[i]dentify whether [a] part or work areas is a Boeing or [Pratt & Whitney] part" and "[i]f the part is Boeing" to "use the Air Force Technical Orders," which were drafted by Boeing for the C-17, and "[i]f part is a Pratt & Whitney" to use "P&W manuals," which were drafted by Pratt & Whitney for the F117. *Id.* at 48.

¹⁹ Study Guide at 3 (emphasis added).

40. James Dolen, United’s “Manager of Maintenance at the Charleston Air Force Base” who “was employed by [United] for over 35 years,” has executed an affidavit describing Pratt & Whitney’s contract with United as follows:

Pursuant to a contract with Pratt & Whitney, United provides maintenance and repair services on the F-117 engines for the C-17 Globemaster aircraft used by the United States Air Force. United and Pratt & Whitney share space and have employees in a building on the Charleston Air Force Base known as the Module Replacement Center (“MRC”), where work is performed on the F-117 engines.²⁰

41. A Prospectus filed with the U.S. Securities and Exchange Commission by United Continental Holdings, Inc. (United’s parent company) describes United’s “maintenance contract to perform engine overhauls for the USAF” and states that, as a result of that contract, United carries “[c]ustomer inventory” that “is primarily composed of Pratt & Whitney F117 / PW2000 spare engine parts that are owned by the United States Air Force ... but utilized by United Airlines in support of its maintenance contract to perform engine overhauls for the [Air Force].”²¹

42. A Lesson Plan in the United Airlines Trainer Manual (the “Trainer Manual”) for the Charleston Module Replacement Center discusses how to “accurately recite *the company’s contract with its responsibilities to the U.S. Air Force, Boeing [and] the Pratt company* while working at Charleston.”²²

²⁰ Affidavit of James Dolen, ¶ 3 *James v. Pratt & Whitney, et al.*, No. 2:03-1022-18 (D.S.C. Jan. 29, 2004) (ECF No. 39-4).

²¹ United Continental Holdings, Inc., Prospectus (Form 424B5), at App’x II-10 (June 29, 2009) (“An Appraisal of United Airlines’ Spare Parts Inventory”).

²² Trainer Manual at 24 (emphasis added).

43. Lamar Strachan, a lead mechanic employed by United for nineteen years, testified that the Air Force is United's "ultimate customer."²³

44. According to a court filing on behalf of Pratt & Whitney, "United is a subcontractor to Pratt & Whitney and provides maintenance and repair services for the F-117 aircraft engine used on the C-17 'Globemaster' aircraft that are in service with the United States Air Force...."²⁴

C. United Is Required to Perform Its Work in Accordance with Air Force Technical Orders and Federal Aviation Regulations

1. Air Force Technical Orders

45. "Military technical orders detail repair requirements with regard to materials, labor, tolerance levels of replacement parts, delivery dates and inspections."²⁵ "TOs are essentially manuals that provide instructions on how to maintain, inspect, or fly airplanes."²⁶ Aircraft "manuals ... [are often] published by the Air Force as 'technical orders.'"²⁷

46. "Technical orders are essential to the mechanics who perform aircraft maintenance and repair" for the Air Force.²⁸ "[D]estruction and alteration of technical orders constitute[s] a

²³ Strachan Dep. Tr. 91:7-92:12, *James v. Pratt & Whitney, et al.*, No. 2:03-cv-01022-DCN (D.S.C. June 13, 2005) (ECF No. 438-1).

²⁴ Memorandum in Supp. of Defs' Mot. for Summary Judgment, *James v. Pratt & Whitney, et al.*, No. 2:03-cv-01022-DCN (D.S.C. May 16, 2005) (ECF No. 39-1).

²⁵ *G&H Mach. Co. v. United States*, 16 Cl. Ct. 568, 573 (1989).

²⁶ *U.S. ex rel. Carpenter v. S & K Techs., Inc.*, No. 5:08-CV-287 MTT, 2011 WL 3664415, at *1 (M.D. Ga. Aug. 19, 2011).

²⁷ *In re Aircraft Crash Litig. Frederick, Md., May 6, 1981*, 752 F. Supp. 1326, 1365 (S.D. Ohio 1990), aff'd sub nom. *Darling v. Boeing Co.*, 935 F.2d 269 (6th Cir. 1991).

²⁸ *Reese v. Dep't of Air Force*, 37 F. App'x 534, 536 (Fed. Cir. 2002) (upholding Air Force's decision to remove "technical order clerk" who inappropriately "shredded" and "failed to initial changes to technical orders").

significant safety threat.”²⁹ “[F]ailure to adhere to a technical order” subjects an Air Force mechanic to “suspension” and “punishment.”³⁰

47. Contractors such as United have the “obligation ... to comply with federally-established safety standards, e.g., those appearing in Air Force technical orders”³¹ “[A] jet engine mechanic [has] the responsibility and duty to follow ... all technical orders and manuals regarding the performance of aircraft maintenance and required inspections....”³²

48. Lamar Strachan, a lead mechanic employed by United for nineteen years, testified that T.O. “C-17A-10” is “the Air Force’s manual for doing basically what we do, which is buildup and teardown of the engine.” Mr. Strachan stated that “[m]ostly we used the [T.O. C-17A-10]. And then probably second would have been the Pratt & Whitney manuals. And then the United manuals.” Mr. Strachan also stated that “you could refer to [T.O. C-17A-10] three or four times during the shift.”³³

49. William Williams, Pratt & Whitney’s F117 Flexible Sustainment Manager in Charleston, testified that “in my Air Force years, yes, that was a requirement that when you

²⁹ *Id.*

³⁰ *Rouse v. Fanning*, No. 5:13-CV-261 (LJA), 2015 WL 6675563, at *2 (M.D. Ga. Nov. 2, 2015) (noting that “thirty-six employees were punished” for “technical order violations”).

³¹ *Kropp v. Douglas Aircraft Co.*, 329 F. Supp. 447, 469 (E.D.N.Y. 1971).

³² *United States v. Elizee*, No. ACM S31316, 2008 WL 4525836, at *1 (A.F. Ct. Crim. App. Aug. 20, 2008) (affirming court-martial conviction of “willful dereliction of duty” and “confinement for 60 days” of “F-16 engine mechanic” who “failed to conduct the required detailed inspection following a Foreign Object (FO) intake incident into the engine to ensure the engine was not damaged.”).

³³ Strachan Dep. Tr. 45:10-47:9, *James v. Pratt & Whitney, et al.*, No. 2:03-cv-01022-DCN (D.S.C. June 13, 2005) (ECF No. 48-1).

corrected a condition, you normally were required to cite the technical order that you were using to take that particular action.”³⁴

50. An example of a Technical Order for the C-17 is TO 1C-17A-783 dated May 9, 1997, which was issued “by Order of the Secretary of the Air Force”; “Prepared by McDonnell Douglas Corporation”; and approved by the “General, USAF, Chief of Staff.”

2. Federal Aviation Regulations

51. As noted above, United’s contract with Pratt & Whitney requires it to perform its “services ... to overhaul and/or repair engines to a serviceable condition in accordance to United FAA approved and/or accepted procedures and the P&W build standards.”

52. The “F117 – ENGINE MANUAL” states that in accordance with “CUSTOMER SPECIFICATION – AIR FORCE ... AIR FORCE-F117 engines will be inspected, repaired and tested per United Airlines Specification Procedures, exercising United Airline’s FAR 145 authority.”

53. Similarly, United’s Trainer Manual states that United performs “[a]ll maintenance” under its “FAR *part 145*” “Repair Certificate No. UALR011A.”³⁵

FARs Prohibited United from Making False Entries in Any Repair Record or Report

54. 14 C.F.R. § 145.12(a) provides that “[n]o person may make or cause to be made ... [a]ny fraudulent or intentionally false entry in ... “[a]ny record or report that is made, kept, or used to show compliance with any requirement under this part.”

³⁴ Williams Dep. Tr. 33:23-34:2, *James v. Pratt & Whitney, et al.*, No. 2:03-cv-01022-DCN (D.S.C. June 13, 2005) (ECF No. 48-4).

³⁵ Trainer Manual at 42.

55. 14 C.F.R. § 145.12(b) provides that “[n]o person may, by omission, knowingly conceal or cause to be concealed, a material fact in “[a]ny record or report that is made, kept, or used to show compliance with any requirement under this part.”

FARs Required United to Perform Maintenance in Accordance with Its Manuals

56. 14 C.F.R. § 121.367 provides that “[e]ach certificate holder shall have an inspection program and a program covering other maintenance, preventive maintenance, and alterations that ensures that—

- (a) *Maintenance*, preventive maintenance, and alterations performed by it, or by other persons, are *performed in accordance with the certificate holder’s manual*;
- (b) Competent personnel and adequate facilities and equipment are provided for the proper performance of maintenance, preventive maintenance, and alterations; and
- (c) Each aircraft released to service is airworthy and has been properly maintained for operation under this part.³⁶

FARs Required United Inspect Repairs with a “Second Set of Eyes”

57. 14 C.F.R. § 121.371 provides that “[n]o person may use any person to perform required inspections unless the person performing the inspection is appropriately certificated, properly trained, qualified, and authorized to do so” and “[n]o person may perform a required inspection if he performed the item of work required to be inspected.”

58. Consistent with the “second set of eyes” rule mandated by 14 C.F.R. § 121.371, United’s “Administrative / Technical Manual” provides that no “Required Inspection Item” can be repaired and inspected by the same person:

³⁶ Because Boeing manufactured the C-17 and Pratt & Whitney manufactured the F117 engine, United technicians are instructed to “[i]dentify whether [a] part or work areas is a Boeing or [Pratt & Whitney] part” and “[i]f the part is Boeing” to “use the Air Force Technical Orders,” which were drafted by Boeing for the C-17, and “[i]f part is a Pratt & Whitney” to use “P&W manuals,” which were drafted by Pratt & Whitney for the F117. Study Guide at 48 (“USING T.O.S + P&W MANUALS”).

(1) The FAA defines Required Inspection Item (RII) as any maintenance procedure, repair or alteration that if improperly performed or if performed with incorrect parts or materials could result in a failure, malfunction or defect endangering the safe operation of the aircraft...

(2) *RIIs must be accomplished by a person other than the one who performed the work (maintenance); this is the “second set of eyes” concept.* That person who performs an RII inspection must be appropriately FAA certificated, properly trained, qualified and authorized to perform the inspection and under the supervision and control of the Inspection Unit (Quality Control Department) while performing the required inspection....

FARs Required United to Establish Procedures to Ensure the Calibration of Tools and Test Equipment and Inspection of Repairs with a “Second Set of Eyes”

59. 14 C.F.R. § 121.369 provides that “[t]he certificate holder’s manual must ... include at least the following ...

(5) Procedures, standards, and limits necessary for required inspections and acceptance or rejection of the items required to be inspected and for *periodic inspection and calibration of precision tools, measuring devices, and test equipment*.

(6) Procedures to ensure that all required inspections are performed.

(7) *Instructions to prevent any person who performs any item of work from performing any required inspection of that work.*

(8) *Instructions and procedures to prevent any decision of an inspector, regarding any required inspection from being countermanded by persons other than supervisory personnel of the inspection unit, or a person at that level of administrative control that has overall responsibility for the management of both the required inspection functions and the other maintenance, preventive maintenance, and alterations functions.*

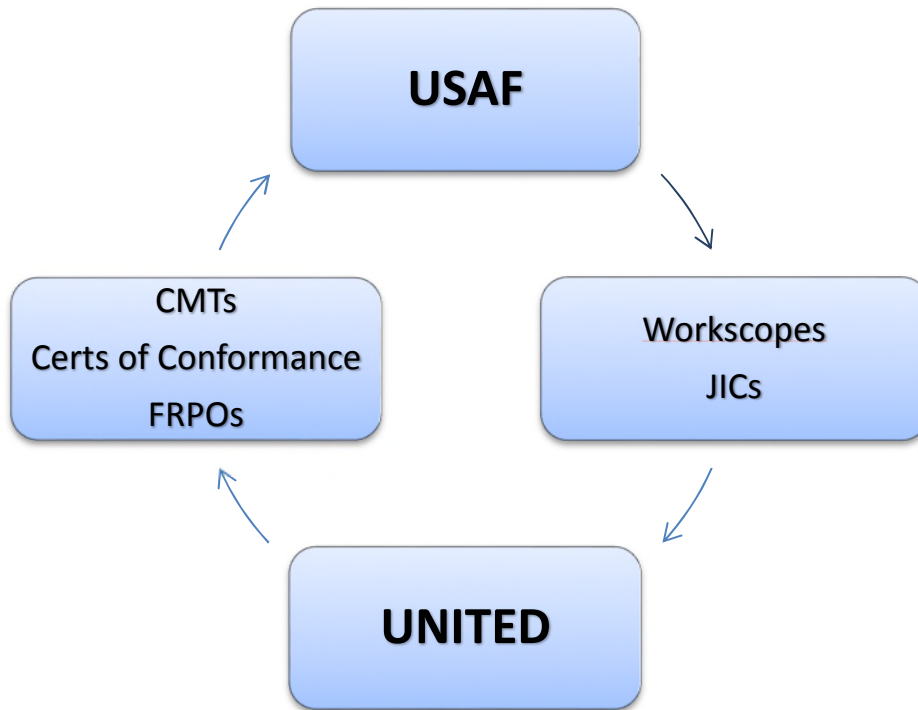
60. Similarly, 14 C.F.R. § 145.109 provides that a FAR-certificated repair station must keep all necessary tools and ensure that those tools are calibrated to FAA and manufacturer standards. Specifically:

- [A] certificated repair station must have the equipment, tools, and materials necessary to perform the maintenance, preventive maintenance, or alterations under its repair station certificate and operations specifications in accordance with part 43. The equipment, tools, and material must be located on the premises and under the repair station’s control when the work is being done.

- A certificated repair station must ensure all test and inspection equipment and tools used to make airworthiness determinations on articles are calibrated to a standard acceptable to the FAA.
- The equipment, tools, and material must be those recommended by the manufacturer of the article or must be at least equivalent to those recommended by the manufacturer and acceptable to the FAA.

D. United Certifies Its Work on Each F117 Engine on Records that United Provides to Its Customers

61. United certifies its work repairing, overhauling, and inspecting F117 engines for Pratt & Whitney, Boeing, and ultimately, the Air Force through a recording system that includes Workscopes, Job Instruction Cards (“JICs”), Customer Maintenance Tags (“CMTs”), Certificates of Conformance, Serviceable Tags, and Field Repair Purchase Orders. Together, these documentary system allows United, Pratt & Whitney, Boeing, and the Air Force to track all *future* work that United plans to perform on F117 engines (i.e., Workscopes and JICs) and all *past* work that United has already performed (i.e., CMTs, Certificates of Conformance, and Serviceable Tags) and to ensure that each engine was properly repaired and is serviceable (airworthy) for use by the Air Force. This system could be depicted generally as follows:



1. Workscopes

62. Workscopes are the equivalent of a work order that a mechanic provides a customer describing the repairs to be performed on a car going into a garage. United prepared workscopes in response to receiving an incoming engine and provided them to Pratt & Whitney to describe the work that was to be performed.

63. For example, a “Work Scope” dated March 3, 2006, for an “Inlet” for Engine Serial Number 170052 for United’s “Customer: P&W/Boeing/Air Force” provides “General Instructions” that United must perform its work in accordance with “[T.O.] 1C-17A Manuals and F117-PW Manuals” and “JIC 7-4000.0”; “Accomplish/verify following TCTOs [i.e., Time Compliance Technical Orders]”;³⁷ and finally, create a Customer Maintenance Tag.

³⁷ “TCTOs are step-by-step instructions” from the Air Force “on how to modify or inspect aircraft ... based on information received from USAF maintenance technicians and equipment specialists.” *U.S. ex rel. Carpenter*, No. 5:08-CV-287 MTT, 2011 WL 3664415, at *1 (M.D. Ga. Aug. 19, 2011).

UNITED AIRLINES

2012-03-06

WORK SCOPE

Inlet S/N: 04090
Inlet Order No: IQ264
Customer: P&W/Boeing/Air Force

ENGINE INFORMATION

Maintenance Event No: CF0102085
Engine Serial Number: 170052
Reason for removal:
Normal maintenance

Date Removed: 2012/02/21

GENERAL INSTRUCTIONS

1. Authorized documents: UAL's CHS documents, 1C-17A Manuals and F117-PW-100 Manuals.
2. Accomplish Normal Visit on JIC 7-4000.0.
3. Accomplish/verify following TCTOs/SBs: None
4. Final: CMT creation.

2. Job Instruction Cards

64. When United's Charleston facility receives an incoming F117 engine or component (such as an Inlet or CTR), a JIC is generated that details each step in the specific repairs to be performed by the technicians, citing to applicable T.O. provisions. As repairs are completed and inspected, United personnel sign-off beside that repair on the JIC using their personal stamp or initials.

65. United's Study Guide describes JICs as follows:

JOB INSTRUCTION CARDS

Scope:

As each engine or component is input to the shop a complete set of JICs is prepared and supplied to the appropriate work center.

Sign-off:

Designated by a capital letter or a dot in the sign-off block[s]...

1. A stamp is required when signing for work accomplished. Stamp numbers will not be hand written.

2. In the absence of a stamp, initials may be used. When initials are used, the initials and the legible signature, and the file number must be entered on a single line at the bottom of each page being initiated.

II. Purpose/Scope:

[JICs] are to be used as technical instructions to disassemble and assemble the basic engine and QEC. A separate set of JICs are maintained for each engine type.

[JICs] are used by United Airlines to record required maintenance for our customer....

66. A mechanic's stamp on a JIC indicates that the work is "complete and correct in accordance with all applicable specifications and shop support documents." "Lead [mechanic] sign-offs signify that ... [o]perational checks, pressure tests, ***torque requirements checks...have been accomplished in the presence of the lead mechanic, as required by JICs.***" An Inspector's "stamp in the sign-off block signifies that the specified inspection has been accomplished according to all applicable specification and shop support documents."³⁸

67. The "text of a JIC cannot be *Deleted, Altered, and/or Voided* without written engineering approval."³⁹ "A complete set of [JICs] are prepared and supplied to all appropriate work centers within the Turbine shop/[MRC] for each engine as serviced for maintenance."⁴⁰

68. "Job Cards are a basic part of United Airlines Maintenance production and quality control system. *Any work form that controls sequence or requires accomplishment sign-off is a job card.*"⁴¹

³⁸ Study Guide at 40-42, 44-45 (emphases added).

³⁹ Trainer Manual at 44.

⁴⁰ Trainer Manual at 45.

⁴¹ Trainer Manual at 40.

69. William Williams, Pratt & Whitney's F117 Flexible Sustainment Manager, testified that the purpose of a JIC is to "specif[y] the activities to be accomplished by the technician."⁴²

70. One JIC, which instructs how to install a "Core Reverser Assembly" directs the technician to the relevant section of T.O. 1C-17A-10; to install the assembly with 30-40 inch-lbs of torque; and finally, to fill out a "Customer Maintenance Tag" reflecting that the installation is complete. An image of this JIC is below:

Job Instruction Card F117 CHS		CORE REVERSER ASSEMBLY - INSTALL	
		ENGINE NO	7-9216.0 JOB NO.
<p>====REVERSER ACTUATOR COOLING DUCT INSTALLATION==== (SEE TO 1C-17A-10 SECTION 4-79, FIG 4-23)</p>			
<p>L999 M X</p>	<p>15. ATTACH CORE REVERSER COOLING DUCT ASSEMBLY (9, FIG 4-23). A. INSTALL DUCT ASSEMBLY TO SUPPORT BRACKETS, WITH FOUR BOLTS (93), WASHERS (6) AND NUTS (7). TORQUE 20-25 IN-LB B. INSTALL DUCT TO REVERSER ACTUATOR HOUSING WITH FIVE BOLTS (2), WASHERS (4) AND NUTS (7). TORQUE 30-40 IN-LB.</p>		
<p>M _____</p>	<p>16. MECHANIC FILL OUT INSTALLATION LINE OF CUSTOMER MAINTENANCE TAG.</p>		
END JOB 7-9216.0		REVISED 06/26/00	KRN

3. Customer Maintenance Tags or "Serviceable" Tags

71. CMTs or "serviceable" tages accompany repaired engines, inlets, and CTRs as they return from United to Pratt & Whitney, and ultimately, the Air Force. United's "Administrative / Technical Manual," Section 07-65-10, describes "CUSTOMER MAINTENANCE TAGS – (CMT)" as follows:

1. General

⁴² Williams Dep. Tr. 31:11-17, *James v. Pratt & Whitney, et al.*, No. 2:03-cv-01022-DCN (D.S.C. June 13, 2005) (ECF No. 48-4).

- B. The CMT is used to identify and route customer units through UNITED's system. The CMT can be used as requested in the customer agreement for work performed under 14 CFR Part 145 or 14 CFR Part 121 requirements.
- C. The CMT four-copy tag has the functionality to identify, route, rework, and return customer units (i.e., assemblies, components, parts, etc.) to a specified recipient."

72. Each CMT is made up of four copies, including (1) a "Work Copy"; (2) a "SFOMR [San Francisco] Maintenance Records Copy"; (3) a "Customer Record Copy"; and (4) a "Customer Copy... (serviceable tag)."

73. United employees are instructed to "exercise care" in handling CMTs because "[if] a serviceable United units is installed on the customer aircraft, the United serviceable tag will be held with the aircraft's paper package and forwarded to the appropriate control center upon completion." Specifically:

Whenever a customer aircraft is worked by United, exercise care in handling of tags. If a serviceable United unit is installed on the customer aircraft, the United serviceable tag will be held with the aircraft's paper package and forwarded to the appropriate control center upon completion. All exchanged units from customer aircraft will be sent to the appropriate shop with a CMT attached and the "EXCHANGE" block checked.

(Emphasis added).

74. One CMT dated August 20, 2012, for a "CTR" from "CHS" (i.e., Charleston) is stamped "*For Use Only on Air Force (MC) F117 Engines*" and states that it is a "*Customer Record Copy*" and lists the "Customer" as "F117" and "C17." The CMT's "Work Instructions" state "*see ... work scope & accomplish work in accordance*" and below indicates that the "*repaired only by described above.*" An image of the CMT is below:

IDENTIFICATION OF UNIT		UNITED STATES CUSTOMER MAINTENANCE TAG										Version V			
RCS NO.		SHIPPING MEMO NO.		UNIT NO.		NAME		DASH NO.		QTY.		JOB NO. OFF		JOB NO. ON	
U.A. CLASS		INVENTORY		PART NO.		NAME		DASH NO.		QTY.		JOB NO. OFF		JOB NO. ON	
UNIT MFR.		MFR. PART NO.		MFR. SERIAL NO.		CUSTOMER P.O. NO.		WHS OR ORDER NO.		VADE NO.		CUSTOMER			
PLANE NO.		PLANE TT		ENGINE NO.		ENG. TSO/TT		DATE		UNIT TSO		UNIT POS.		STATION	
REASON FOR REMOVAL & WORK INSTRUCTIONS		SEE ATT. JUST PD FOR WORK DONE & RECOMPLETION WORK IN													
REASON FOR REMOVAL & WORK INSTRUCTIONS		FIN													
REPAIR ONLY (SERVICEABILITY UNCERTIFIED)		REPAIR (MAKE SERVICEABLE)		OVERHAUL		MANUFACTURE		R & R INSTRUCTIONS APPROVE BY		PHONE					
MAINT. SHOPS		PS		CZP											
EXCHANGE		RETURN TO		DATE		TIME									
DOES CONDITION AGREE		REPORTED TROUBLE		YES		NO		COULD HAVE UNIT REMAINED IN SERVICE		YES		NO			
CAUSE OF FAILURE OR DISCREPANCY															
WORK ACCOMPLISHED AND MAJOR PARTS REPLACED		RUDG.													
WORK ACCOMPLISHED AND MAJOR PARTS REPLACED															
AFMC CRS# UALR011A		AIR CARRIER CERT. # CALA014A													
REPAIRED ONLY BY DESCRIBED ABOVE		REPAIRED (SERVICEABLE)		OVERHAULED		SIGNATURE AND FIN		DATE							
PLANE NO.		PLANE TT		ENGINE NO.		DATE ON		STATION		UNIT POSITION		INSTALLED BY		SHIPPING CONT.	
RQ115		10-9-12		CTR		CHS		UAL							

102384 VERSION V REV 12/2011

CUSTOMER RECORD COPY-LEAVE ATTACHED TO HARD COPY

75. Another CMT for a CTR identifies the “Customer” as “USAF.” The CMT’s “Work instructions” state “Overhaul (Normal Maintenance Package)” and that “all work [had been] accomplished [in accordance with] JIC” and that the CTR was “ready for installation on to an engine for testing in the [engine] test cell” and listed the final status of the CTR as was “overhauled.” An image of the CMT is below:

UNITED CUSTOMER MAINTENANCE TAG										A32294		32294	
RCS NO.		SHIPPING MEMO NO.								DASH NO.		QTY.	
UA CLASS		INVENTORY		PART NO.		NAME		DASH NO.		QTY.		JOB NO. OFF	
UNIT MANUFACTURER		MFR. PART NO.		MFR. SERIAL NO.		CUSTOMER P.O. NO.		W/U OR ORDER NO.		VADE NO.		CUSTOMER	
PLANE NO.		PLANE TT		ENGINE NO.		ENG. TSO/TT		DATE		UNIT TSO		UNIT POS.	
REASON FOR REMOVAL & WORK INSTRUCTIONS		OVERHAUL (NORMAL MAINTENANCE PACKAGE)											
<input type="checkbox"/> REPAIR ONLY (SERVICEABILITY UNCERTIFIED)		<input type="checkbox"/> REPAIR (MAKE SERVICEABLE)		<input checked="" type="checkbox"/> OVERHAUL		<input type="checkbox"/> MANUFACTURE		MENDOL(A343)762-1849					
ROUTING		PS		CS		EXCHANGE		RETURN TO		DATE		TIME	
DOES CONDITION AGREE WITH REPORTED TROUBLE		<input type="checkbox"/> YES		<input type="checkbox"/> NO		COULD UNIT HAVE REMAINED IN SERVICE		<input type="checkbox"/> YES		<input type="checkbox"/> NO			
SHOP FINDINGS		CAUSE OF FAILURE OR DISCREPANCY											
WORK ACCOMPLISHED AND MAJOR PARTS REPLACED		ALL WORK ACCOMPLISHED JAN 7-3000.0127E W/OUT FUNCTIONALLY TESTED											
CIR. IS READY FOR INSTALLATION ONTO AN ENG. FOR TESTING IN THE ENG. TEST CELL													
<input checked="" type="checkbox"/> SPMC CRS# UALR011A		<input type="checkbox"/> AIR CARRIER CERT. # CALA 014A		<input checked="" type="checkbox"/> OVERHAULED		SIGNATURE AND F/N		DATE					
REPAIRED ONLY AS DESCRIBED ABOVE		REPAIRED (SERVICEABLE)											
PLANE NO.		PLANE TT		ENGINE NO.		DATE ON		STATION		UNIT POSITION		SHIPPING CONTAINER	

4. Certificates of Conformance

76. Certificates of Conformance and Serviceable Tags, issued by United, also accompany engines when they leave Charleston and are returned to the Air Force.

77. For example, a "Certificate of Conformance" on "UAL/MRC Form 1100-3" dated May 12, 2012, "reference[d] F117 Quick Engine Change (QEC) Material from United Airlines at Joint Base Charleston Modular Replacement Center (MRC) to Pratt & Whitney Oklahoma City Engine Center." The certificate stated: "This material is specifically for F117 program use only. *This form certifies the part numbers listed are serviceable under FAA Guidelines.*" The hundreds of parts included clamps, fittings, nuts, seals, and similar items. The certificate further stated that "[t]he parts listed on this sheet have been Visually Inspected as Serviceable Material in

compliance with your purchase order requirements. The original Serviceable paperwork is on file with the original Vendor Purchase Order which is maintained by United Airlines per the F117 contract.” The certificate bears a “UAL Inspector’s Stamp/Date.”

78. A Certificate of Conformance includes the following:

The engine was inspected, repaired, modified, reassembled, tested and accepted per applicable job instruction card, technical manuals, routing documents, preservation and packaging requirement.

The following Documents are to be supplied with engine:

1. Certificate of Conformance
2. AFTO 95 Historical Record for Aeronautical Equipment
3. One Copy of Final Acceptance Test
4. DD1574 Serviceable Tag

5. Field Repair Purchase Orders

79. Each F117 Engine that United Repaired corresponded to a “Field Repair Purchase Order” or “FRPO” and was listed in the “F117 Logistics Program Management – Engine Status Report.” On any given date, United was repairing more than forty F117 engines (or engine components such as inlets and CTRs), all of which were tracked by FRPO on this system.

80. T.O. 1C-17A-1831 references this FRPO is a system by which the C-17’s “repairable” parts (such as the F117 engine) are tracked as they are sent to Boeing/Pratt & Whitney/United to be repaired and then returned to the Air Force:

Upon notification that an asset requires modification, the item shall be packaged for shipment and returned to the local Boeing Repair of Reparables (ROR) facility.... ROR shall ship the following item as directed per the Field Repair Purchase Order (FRPO) by the Boeing Asset Manager.⁴³

⁴³ T.O. 1C-17A-1831 (“BY ORDER OF THE SECRETARY OF THE AIR FORCE”).

E. Previous Lawsuits Against United Alleged Similar Misconduct

81. Two previous lawsuits by United employees suggest a pattern of non-compliance.

1. *United States of America, ex. rel. Douglas R. Niven v. United Air Lines, Inc.*

82. On February 4, 2003, Douglas R. Niven, a mechanic employed by United at the MRC on the CAFB, filed a *qui tam* action styled *United States of America, ex. rel. Douglas R. Niven v. United Air Lines, Inc.*, No. 2:03-cv-00386-PMD (D.S.C.). The action related to United's operations at the CAFB under subcontracts issued by Pratt & Whitney, and alleged that United had failed to:

1) insure its mechanics always had available required torque wrenches and calibrated/operable torque testers; 2) insure that its mechanics always used required torque wrenches on non-critical clamps, bolts and fittings when installing components onto the engines; 3) remove fuel/oil coolers, part number PWA 1B-706, that could have been identified as leaking and perform follow-up idel leak tests on the engines; 4) perform follow-up functional or idle leak tests on thirty engines after engine components were replaced from about April 1, 1998 through July 30, 2002; and 5) properly use torque wrenches, analyzers, and boroscopes and comply with work instructions.⁴⁴

83. On April 4, 2003, the United States intervened in the case.

84. On April 21, 2003, United entered into a Settlement Agreement with the United States, on behalf of the Air Force, and Relator Niven by which it agreed, among other things, to pay \$3,200,000 to the United States, to resolve the matter.⁴⁵

2. *James v. Pratt & Whitney, et al.*

85. On February 6, 2003, Larry James, a lead mechanic employed by United at the Charleston Air Force Base, filed an action against Pratt & Whitney and its parent, United

⁴⁴ Settlement Agreement, ¶ P, *United States of America, ex. rel. Douglas R. Niven v. United Air Lines, Inc.*, No. 2:03-cv-00386-PMD (D.S.C.) (ECF. No. 15).

⁴⁵ *Id.* at ¶ 2.

Technologies Corporation.⁴⁶ Mr. James alleged that his supervisor, a foreman, confronted and coerced him to falsify his report that found damage to a C-17 engine:

[P]laintiff alleges that in 2000, a mechanic working under his supervision “discovered a crack in the ceramic surrounding a fuel injector in one of the engines, and reported the damage to [plaintiff],” who “oversaw the employee’s completion of the form noting the damage, and concurred in the mechanic’s decision to report the damage.” However, shortly after the report was submitted, a foreman for [United] confronted the mechanic and plaintiff and “demanded that [the mechanic] withdraw his report, line through it, and write ‘entered in error’ on the form so that the damaged engine could be presented to the Air Force as ready for service without repair to the damaged fuel injector.” Plaintiff refused to falsify the report. Some time later, after they had given their “final word” to this effect, plaintiff alleges that Bill Williams, a representative of Pratt & Whitney, “began to frequently appear at the [plaintiff’s] work area, subjecting [plaintiff] to heightened surveillance and observation” and creating a “hostile work environment” for plaintiff “in retaliation for his having refused to falsify maintenance records for the C-17 engines.” Plaintiff then alleges that Bill Williams and Mr. Baxter, his foreman at [United], intentionally interfered with his work progress and subsequently “created unsupported and unjustifiable records indicating that [plaintiff’s] work was unjustifiably slow on the [aircraft] engines.”

Subsequently, plaintiff was ... terminated

F. United Made False Claims for Repairs and Overhauls of F117 Engines in Violation of Its Contract, Air Force Technical Orders, FARs, and Its Own Policies

1. United Submitted False Claims by “Pencil Whipping” Repairs

86. “‘Pencil whipping’ is a term of art in the airline industry referring to maintenance work that has not been done yet nonetheless is signed off as having been completed.”⁴⁷

⁴⁶ *James v. Pratt & Whitney, et al.*, No. 2:03-1022-18-DCN (D.S.C. Dec. 14, 2005) (Order and Opinion) (internal citations omitted).

⁴⁷ *Macionski v. Alaska Airlines*, No. CV-93-5974-RWSL, 1995 WL 406172, at *1 n.1 (C.D. Cal. Jan. 12, 1995) (“Under 49 U.S.C. § 46310 criminal penalties can be imposed on an airline or its employees for such activity.”), *aff’d*, 94 F.3d 652 (9th Cir. 1996); *see also* 49 U.S.C. § 46310(a) (“An air carrier or an officer, agent, or employee of an air carrier shall be fined under title 18 for intentionally-- (1) failing to make a report or keep a record under this part; (2) falsifying, mutilating, or altering a report or record under this part; or (3) filing a false report or record under this part.”).

87. In 1990, Eastern Airlines was criminally indicted by a federal grand jury for “on charges that supervisors at three airports routinely ignored vital repairs and maintenance and then falsified records to make it appear as if the work had been performed”:

*The indictment ... said that Eastern managers doctored work cards, log books and other documents in a practice called “pencil whipping” to avoid making repairs that would have led to expensive delays or canceled flights. Supervisors purportedly forged other employees’ names and signed fictitious names on maintenance records to hide that the repairs were not made, the indictment said.*⁴⁸

88. An article in *Fortune* describes “pencil whipping” as follows:

THEY CALL IT pencil-whipping: doctoring computer entries, logbooks, and work cards so that vital maintenance and safety repairs seem to have been performed.... The alleged violations could have caused injuries and death: failure to grease wing-flap gears, failure to drain contaminants from aircraft fuel tanks, failure to examine turbine blades. *“There were occasions when a mechanic would say, ‘Look, we don’t have time to do this repair,’” alleges Michael O’Connell, Machinists union president at New York’s Kennedy Airport. “The Eastern foreman would take the logbook out of his hands and sign it off.”*⁴⁹

89. An employee of ST Aerospace Mobile described “pencil whipping” in an interview for *PBS Frontline*:

Define pencil whipping for people. What does that mean?

“Bob”: If I was pencil whipping a job, that means I’m just going to sign it off and lie about what I did, and shop for me an inspector who’ll say, “Yeah, man. I’ll stamp that because that wasn’t important anyway. We’re going to pencil whip that and get it done so that we don’t lose time, you know, fixing it.” “Well, that’s not really that bad so why fix it? That will make it another ... through the next check, so let’s go ahead and sign it off.” That’s pencil whipping is when you sign it off without doing the maintenance.

⁴⁸ Eric Weiner, “Eastern Airlines Indicted in Scheme Over Maintenance,” *The New York Times* (July 26, 1990) (available at <http://www.nytimes.com/1990/07/26/business/eastern-airlines-indicted-in-scheme-over-maintenance.html?pagewanted=all>).

⁴⁹ Eric Caloniou, “THE FAA’S LOOSE GRIP ON AIR SAFETY With more -- and older -- planes in the sky, the airline system needs tougher policing. But the agency that’s supposed to do the job is undermanned and badly managed,” *Fortune* (Oct. 8, 1990) (available at http://archive.fortune.com/magazines/fortune/fortune_archive/1990/10/08/74166/index.htm).

You whipped the problem with a pencil, not a wrench.

Bob: That's right, that's pencil whipping.

So if the culture is do it fast, get the plane out the door...

Bob: Let's get it out. Let's get it out of here on time because we can't afford to be late, because we don't want to lose this contract and everybody needs a job and, you know, one of those deals.⁵⁰

a. After an Inspector Alerted United that Pieces of a “Large Repair” on a “Core Inlet” Had been “Cracking Off” as if the “Repair Was Not Clean,” United Told the Inspector It “Should Be a Non-Issue”

90. On August 22, 2012, Dudley Andrews wrote to Larry Barnwell, Karl Mendiola, Kenneth Nelson, and John Hagerman that “small [chunks] cracked cleanly off of the aft portion” of a “large ... repair on [a] core inlet ... as if the surface of the repair was not clean before applying repair. Seems the more he sanded on the aft side, the more little pieces started cracking off.” Mr. Barnwell responded: “The direction for this repair is to alodine exposed metal surface on fan case 6:00 position and leave it alone. This was a serviceable engine and the repair was authorized by PW. Production will need to sign off what they have accomplished on this repair.” Mr. Andrews replied: “Do we concern ourselves with the possibility of the base repair continuing to chip?” Mr. Hagerman responded: *“No because with regular inspections and checks performed by our Air Force maintainers around the world this should be a non-issue.”*

91. On October 11, 2012, Inspector Leonard Rutman wrote a Maintenance Safety Awareness Program (“MSAP”) Report on United’s website concerning the same incident. In the MSAP report, Inspector Rutman wrote that had he reported violations “per the air force, T.O. dash 10” including “wrong parts installed”, but United management “asked him to make it disappear or

⁵⁰Frontline, “Flying Cheaper” (available at <http://www.pbs.org/wgbh/pages/frontline/flying-cheaper/etc/st-employee-interviews.html>).

shop for another inspector to sign the item off.” Inspector Rutman also wrote that he “ha[d] been coerce[d] into not making write ups on our C117 PW 2000 Engines.” In particular, the MSAP report stated as follows:

I am your senior Inspector here at the [CAFB].... I wish to inform you of an injustice which is being done here at CHS. I have been [coerced] into not making write ups on our C117 PW 2000 Engines. When I make write ups I am told that [they are] B.S., Fit form and function is good enough. I have been on several occasions requested to sign off on a particular repair I have no way to verify on a [CTR] track. I refused to make the tracks serviceable and I have been scrutinized for it. When I make other write ups on the engines per the air force, T.O. dash 10, the Engine [Manual] or IPC for wrong parts installed, that local management does not agree with they either go to the local engineering, ask me to make it disappear or shop for another inspector to sign the item off in instead of taking less time usually correcting the discrep[anc]ies of late august 29th I am still under investigation removed from my inspection duties after I refused to sign off on a repair I found desponded on a fan case on an incoming inspection....

(Emphasis added).

92. On March 20, 2014, Relator Grant wrote to Mark Eldred, United’s Managing Director of Maintenance, Repair, and Overhaul in San Francisco, to report the incident above involving the cracking core inlet found by Mr. Rutman and pencil-whipped by United management:

I have attached 5 documents to this email. This is some of the factual documentation referring to the “let it go” mentality and not following the established maintenance practices that has become commonplace at the Charleston jet engine shop.

The first document page 1 of 5 is an email chain that comes from supervisor Craig Andrews to engineer Larry Barnwell and on to CHSPD manager John Hagerman. The e-mail refers to known defects found by one of Mr. Hagerman inspectors, Mr. Rutman. This communication [refers] to non routine # 047339. (found on page 2 of 5)

The non routine was generated August 10, 2012.

Mr. Rutman found a deficient repair in the fan case about 20 by 6 inches. It had voids and was already starting to fail. This was a FOD hazard and needed to be repaired properly. But as you can see from the dialogue John Hagerman wanted to

pass the buck to our customer the US Air Force who is paying good money to have us fix these discrepancies.

Nonroutine #047340 states “fan exit guide vain base, outboard, separated from potted area at the leading edge lower edge at 8:15 vain marked”.

Non routine #047340 was never assigned to a mechanic and work this visit. Charleston jet shop manager John Hagerman got the inspection supervisor from SFO to pencil whip this non routine. The engine was put into serviceable the spare engine pool barn.

When the engine came back out on the shop floor for maintenance the second time to work the safety wire issue. Mr. Rutman wrote up the discrepancy again. This time the item was worked and the original discrepancy was finally repaired. It's the conduct that I find most disturbing that Mr. Hagerman would try to intimidate the jet shop inspector into not making safety of Flight write ups. This is down right dangerous and has the potential of harming the program and the contract.

I shared with you yesterday that we've a hydraulic line swager that has been uncertified for several years. We've been promised that this tool would be repaired or certified repeatedly for at least 1 year. Only until recently has local management stop assigning guys to complete work using this worn out and unserviceable tool. I was told today we should have a new one by May 19th 2012.

My other concern was for the FPI and its associated calibration tool. I was told today that it will be shipped and overnighted. We should have it tomorrow.

I am still concerned about the training these guys received to certify them for FPI. Many didn't know utilizing the light meter is a requirement to safely signing off and performing FPI inspections.

If you have any questions please give me a call.

93. On March 27, 2014, Mr. Eldred replied to Relator Grant, “We currently have a full out audit in work.”

b. United Falsified a Repair on a Cracked Upper Track Hanger It Retrieved from a Dumpster After It Had Been Scrapped as “Unserviceable”

94. An Upper Track Hanger is a component of the C-CTR. According to the “F117-PW-100 Program Core Thrust Reverser (CTR) Maintenance Manual,” there are “[n]o cracks allowed” on “Upper Track Hanger Assemblies” and any crack on an upper track hanger would

require repair by welding. But after such weld repairs had begun failing and re-cracking, United “deleted” this repair and made it policy that cracked upper track hangers should be discarded and mutilated to avoid returning to service.

95. On February 19, 2014, John Hagerman, United’s Charleston Manager of Engine Overhaul and Repair, told Karl Mendiola to assign technicians Charles Seeber and Paul Buenger to return scrapped parts from the dumpster into production. Mr. Hagerman directed Messrs. Seeber and Buenger to retrieve upper track hangers, Part Number 17P8D851 4-1, from the garbage.

96. The upper track hanger that was retrieved from the garbage had previously been deemed unserviceable by Quality Control inspectors Leonard Rutman and Jerry Zuk. When questioned about this dumpster diving for jet engine parts (17P8D851 4-1), Karl Mendiola indicated, “that’s not garbage, that’s gold.”

97. United Provisioning Coordinator John Provost assigned Relator Grant to generate CMTs for the parts (17P8D851 4-1).

98. United employees John Hagerman, Karl Mendiola, John Provost directed Relator Grant to seek instructions from engineer Kay Ray Nelson to fill out customer maintenance tags.

99. When advised that the parts (17P8D851 4-1) were retrieved in violation of United Manual § 07-20-60, which requires unrepairable parts to be disposed and mutilated in accordance with FARs, engineer Kay Ray Nelson proceeded to falsify a repair.

100. On or about March 20, 2014, Relator Grant attended a quarterly meeting held by United at the MRC. United’s representatives at this meeting included Manager John Hagerman, Karl Mendiola, Anthony Albert, Manager of Tech Ops and Customer Service for Government Programs, Johnathan Provost, Coordinator of Production Control, and Lawrence Mueller, Senior Quality Control Manager.

101. At this meeting, AMT Hugo Moran asked United's representatives why AMTs were being directed to go into dumpsters for parts. Mr. Hageman responded that to the MRC would come to a work stoppage because they needed parts and so he had assigned five technicians to go into the garbage and pull out parts.

102. At this meeting Anthony Albert also explained United's false billing practices. Specifically, Mr. Albert stated: "a lot of this stuff is tracked in Excel. I'm the same way. ***I can put down, part number X, seven man hours of work, even if it was three, and it averages seven, times 50 harnesses, and we do okay.***"

103. In a subsequent employment arbitration proceeding on May 28, 2015, Paul Buenger, a technician at MRC, testified that United had instructed him and another technician to retrieve a cracked upper track hanger from a "dumpster" after United "ran short" on these parts:

BY MS. HAMILTON:

Q. I have a question about last March, March 2014. Was there an occasion when you and another tech named Cory Seeber were getting -- ended up getting some CTR parts out of a metal dumpster, a trash dumpster?

A. We were asked to go into that dumpster, yes.

Q. Okay. Who asked you?

A. I believe it was Carl Mendiola.

Q. And did you do that?

A. Yes.

BY MR. MENNEL:

Q. What were the parts used for?

A. Those were the hanger parts for the translating sleeve. They turned around -- we were throwing them out after they were cracked because we were no longer repairing them and we ran short so he asked us to take them out of the garbage can so we did.

c. An Inspector Certified His Own Repairs in Violation of the FAA's "Second Set of Eyes" Rule

104. As noted above, 14 C.F.R. § 121.371 provides that “[n]o person may perform a required inspection if he performed the item of work required to be inspected.”

105. Between 2008 and 2014, Neil Barrows, who served as both an Aviation Maintenance Technician (AMT) and a Quality Control (QC) Inspector frequently broke this rule. This pattern is reflected in several JICs in which Mr. Barrows used his inspector stamp (“QC90052”) to stamp both “M” (for the mechanic who performed the work) and “I” (for the inspector who inspected the work. Relator Grant believes, based on his personal observations at the MRC, that Mr. Barrows “slipped up” by stamping these JICs as both mechanic and inspector, thereby revealing his regular practice of both repairing and inspecting the same C-17 Inlets. In other circumstances, Mr. Barrows would ask United mechanic Mark Broyles to sign off with his stamp on repairs that Barrows himself had actually repaired to give the appearance of a different mechanic and inspector where in fact, Mr. Barrows had performed both the repair and the inspection.

106. Further, at all times between 2008 and 2014, Mr. Barrows was visually impaired and unfit to perform QC Inspections.

107. United relied upon Mr. Barrows’ false certifications to create false records and statements that were material to the false and fraudulent claims for payment made to the Air Force for United’s work.

d. After an Inspector Refused to Sign Off on a Repair, a Mechanic Foreman Signed Anyway

108. Another incident of pencil-whipping is recorded in a note written on July 28, 2013, by Leonard Rutman. Mr. Rutman was inspecting a CTR and noticed that one of a repair required by Air Force TCTO 1C-17A-1964C had not been performed. When he refused to sign off on the

repair, his supervisors asked him to sign off on the JIC anyway. Other inspectors also refused to sign off on the repair. Ultimately, the shop foreman, who was not authorized as an inspector, signed off on the repair instead.

I Leonard Rutman was asked to accomplish CTR inspection on Base CK Job [Instruction] Card 7-0109.2. I noticed that the CTR on Eng 170979 TCTO 1964C was not done. I was told that all CTRs with no exceptions from K. Ray or Engineer that none of the CTRs here in CHS would leave without this TCTO done. After more investigation on my part and 2 revisions later in the ENG package I made this write up. I was asked why did I write this up by Karl Mendiola and Craig Andrews. I told them what Engineering stated. They complained that it was not on the work scope. I asked which work scope because there were three and the work scope was changed verbally several times. Then K. Ray recanted the CTR doesn't have to be done for all CTR and they produced this letter after the fact. Notice foreman signed write up. They asked me to sign the write up. I said I did not have to. Supervisors were angry at me for not signing the N/R 051682 Notice. K. Ray EPI stamp did not sign it either. I asked why not have K. Ray sign off the item. Supervisor had no answer. I walked away. *The issue here is I asked question about the TCTO 1964C and I get labeled a trouble maker. Jerry the other Inspector asked management why I would not sign off the item. They did not give him an answer and said if Lenny [Rutman] will not sign off the item why should I??*

2. United Submitted False Claims for Repairs Performed by Uncalibrated and Uncertified Tools

a. United Falsely Certified Fluorescent Penetrant Inspections Performed without a Calibrated Radiometer

(1) Effective FPI Is Crucial to Aircraft Safety

109. Fluorescent penetrant inspection (“FPI”) is a form of non-destructive testing (“NDT”) used throughout the aviation industry to detect surface fractures (caused by metal fatigue) in aircraft parts such as engine fan blades. The technique involves applying a penetrant fluid (a low-viscosity penetrating oil containing fluorescent dyes) to the surface after it has been cleaned and allowing it to penetrate into any surface cracks. Excess penetrant is then removed and a “developer” is applied to act as a blotter and draw the penetrant back out of any surface cracks.

This produces a fluorescent indication of cracks or anomalies when viewed under ultraviolet lighting.

110. NDT is universally acknowledged of importance to safety. According to the NDT Resource Center, “[i]n the aerospace industry, as with other transportation industries, [NDT] can make the difference between life and death.”⁵¹

111. In 1996, Delta Air Lines Flight 1288, a McDonnell Douglas MD-88, experienced an engine failure that killed two passengers and injured another after a “defect in the fan hub was not detected ... in a fluorescent penetrant inspection” that was “conducted in accordance with Pratt & Whitney’s Overhaul Standard Practices Manual (OSPM) inspection procedures and Delta standards, both of which were accepted by the FAA.” Following the incident, the U.S. National Transportation Safety Board concluded that *“[b]ecause of the potentially catastrophic consequences of a missed crack in a critical rotating part, testing methods that evaluate inspector capabilities in visual research and detection, and document their sensitivity to detecting defects on representative parts are necessary.”*⁵²

112. Given its importance to safety, FPI is standard practice in the Air Force. For example, an article in the Air Force’s Public Affairs shows describes an Airman 1st Class in the

⁵¹ See <https://www.nde-ed.org/AboutNDT/SelectedApplications/AircraftInspection/Aircraft%20Inspection.htm>.

⁵² “MD-88 Has Uncontained Engine Failure on Takeoff Roll Following Fan-hub Fracture, a March,” Flight Safety Foundation’s publication, Accident Prevention (1988) (available at https://flightsafety.org/ap/ap_mar98.pdf).

5th Maintenance Squadron performing FPI with a black light on parts of the B-52H Stratofortress.⁵³

113. When cracks are found in an aircraft as strategically important as the C-17, it draws attention at the highest ranks. For example, in 2008, Air Force General Arthur Lichte testified before the U.S. House of Representatives Subcommittee on Air and Land Forces that cracks had been found on the C-17's fuselage and blamed the problem on fatigue stress imposed by using the F117 engine's CTRs "as the former strategic airlifter now performs the more intense, tactical airlift role."⁵⁴

(2) Air Force Technical Orders Require the Use of a Calibrated FPI Radiometer

Air Force Technical Order 1C-17A-36 – Nondestructive Inspection

114. United's requirement to perform FPI of C-17 parts is set forth in the Air Force's Technical Order for the C-17, Technical Order 1C-17A-36. In particular, according to TO 1C-17A-36-1-47:

Inspection procedures contained in this chapter are generic in nature. Personnel performing NDI per the following instructions shall be familiar with the specific inspection technique(s), materials, equipment, and each method's limitations prior to inspecting aircraft structure. Basic theory and principles of NDI are found in TO 33B-1-1. ***General procedures used for fluorescent penetrant, magnetic particle, eddy current surface, and open hole inspections are found in TO 33B-1-2. Part specific procedures used for inspection are found in this manual.***

(Emphasis added).

⁵³ J.T. Armstrong, Non-Destructive Inspection: Seeing Through the B-52, *Public Affairs* (available at <http://www.8af.af.mil/News/Article-Display/Article/996103/non-destructive-inspection-seeing-through-the-b-52>).

⁵⁴ Stephen Trimble, "USAF reveals C-17 cracks and dispute on production future," *Flightglobal.com* (April 4, 2008) (available at <https://www.flightglobal.com/news/articles/usaf-reveals-c-17-cracks-and-dispute-on-production-f-222723/>).

115. T.O. 1C-17A-36 instructs technicians to perform FPI on various parts of the C-17, including the components of the QEC kit (inlets and CTRs) that are exclusively overhauled by United in Charleston, by referring technicians to “T.O. 33B-1-2 - Liquid Penetrant Inspection Method.” For example, T.O. 1C-17A-36-28-9 instructs to “[p]erform fluorescent penetrant inspection” of the low pressure compressor first stage fan blades in accordance with T.O. 33B-1-2. Similarly, T.O. 1C-17A-36-28-24 instructs to perform FPI of the fan exit case assembly in accordance with T.O. 33B-1-2.

Air Force T.O. 33B-1-2 – Liquid Penetrant Inspection Method

116. T.O. 33B-1-2⁵⁵ sets forth the Air Force’s specifications for properly performing an FPI inspection using properly calibrated tools and equipment. Specifically, T.O. 33B-1-2.3.7.1 provides the performance requirements for the black light:

2.3.7.1 Black Light Performance Requirements.

2.3.7.1.1 New Black Light and Bulb Performance Requirements. New black light and replacement bulbs SHALL produce a minimum of 1000 micro-watt/cm² of UV-A *radiation over a 3-inch diameter circle (minimum) as measured by a UV-A light meter placed at a distance of 15 inches from the lamp filter.* Battery powered black light performance shall exhibit this minimum performance during the entire battery life. *White light output SHALL NOT exceed 2 ft-candles as measured with a white-light meter at a distance of 15-inches from the lamp filter.* Black lights and/or bulbs not meeting the above requirements SHALL NOT be procured for general use. The requiring activity may waive the minimum beam diameter requirements for special purpose lights.

2.3.7.1.2 In-Service Black Light Performance Requirements. To be acceptable for continued inspection use, a used black light must produce a minimum of 1000 micro-watts/cm² *UV-A radiation at the point of highest intensity and a minimum of 1000 micro-watts/cm² over a 3-inch diameter circle (minimum) as measured by a UV-A light meter placed at a distance of 15 inches from the lamp filter. White light output SHALL NOT exceed 2 ft-candles as measured with a white-light meter at a distance of 15-inches from the lamp filter.* Lights which do not meet this requirement even with new bulbs shall be disposed of.

⁵⁵ T.O. 33B-1-2 is “Published under Authority of the Secretary of the Air Force.”

(Emphases added).

117. T.O. 33B-1-2.5.4.1.3 sets forth the specifications for the measuring black-light and white-light intensity using a white-light photometer and a black-light radiometer when conducting FPI:

2.5.4.1.3 **UV-A Black Light Intensity and Ambient Light Requirements.**

<p>CAUTION</p>

When performing portable fluorescent penetrant inspection, a dark colored canvas or photographers black cloth SHALL be used to darken the area during the examination. Every effort should be made to reduce ambient light conditions to below 2 foot-candles.

The adequacy of a black light source for fluorescent penetrant inspection is determined by measuring the intensity of the black light with a UV-A meter placed at a distance of 15-inches from the front or outside surface of the black light source filter. The intensity SHALL be at least 1000-micro-watts per square centimeter ($\mu\text{W}/\text{cm}^2$) over a 3-inch diameter circle (minimum), and sources providing less than this intensity SHALL NOT be utilized. The ambient white light SHALL NOT exceed 2-foot-candles. *Ambient white light **SHALL be measured with a white light meter with the black lights on.*** Black lights used in the rinse stations are NOT required to meet these requirements since they are not used to inspect for cracks in parts.

2.5.4.1.3.1 **Excessive White Light.** Some black lights may have excessive white light output based on construction, damage, and/or reflector used. *All black lights (portable and stationary) **SHALL be tested individually for white light output using a photometer at a distance of 15 inches in a fully darkened booth (0.01 to 2 foot-candles).*** Cumulative ambient light from the fully darkened booth and black light/white light output shall not exceed 2 foot-candles. Black lights (portable and stationary) and inspection booths will be checked per T.O. 33B-1-2 for white/ambient light output.

2.5.4.1.4 **Measurement of Black Light Intensity.**

2.5.4.1.4.1 **Measurement Devices.** Ultraviolet light is electromagnetic radiation and is measured in units of energy per time, namely the unit of watt (W). ***Digital radiometers are currently the most commonly used instrument for conducting this measurement. Radiometers typically measure the energy of ultraviolet light in units of energy per time per area, i.e. watts per square meter or microwatts per***

square centimeter where one watt per square meter (W/m²) equals 100 micro-watts per square centimeter (μ W/cm²). Care SHALL be exercised to assure the instrument used for this measurement is designed for the black light (UV-A) or 365-nm band.

118. T.O. 33B-1-2.5.4.2 sets forth the procedures for measure ambient visible light when conducting an FPI:

2.5.4.2 Ambient Visible Light.

2.5.4.2.1 Requirements. Inspection of a part for fluorescent penetrant indications with a black light SHALL always be done under the lowest possible level of ambient light. This increases the contrast between the light emitted from the indication and the background. A low level of visible ambient light is critical for maintaining the sensitivity of the inspection. Ambient light in stationary inspection system booths SHALL NOT exceed 2 foot-candles. If a stationary black light booth is not adequate or appropriate, other provisions SHALL be made.

2.5.4.2.2 Measurement of Ambient Visible Light. *Visible light is measured easily by using photometers or light meters.* The light meter responds to electromagnetic energy with wavelengths of approximately 380 to 750 nm. This range extends into the longer wavelength black light and shorter wavelength infrared ranges. Precise measurement is possible with filters excluding black light and infrared radiation. The unit of measurement is the foot-candle. Another term often used to measure light intensity is the lux, which equals 1-lumen per square meter of surface area. One foot-candle equals approximately 10 lux. ***Measurement of ambient white light SHALL be performed in stationary inspection booths at the required intervals defined in (paragraph 2.5.4.1.3). Ambient light measurements SHALL be performed in accordance with (paragraph 2.6.6) and SHALL be performed with the black lights on.***

119. T.O. 33B-1-2.6.6 instructs for the inspection procedures above to be performed at regular intervals appropriate for the workload: “The process and equipment SHALL be inspected at weekly, monthly, quarterly, or semiannual intervals.”

United’s Manual Required FPI to Be Performed with a Calibrated FPI Radiometer

120. United’s Administrative/Technical Manual, NTM-UAL, SUBJECT Part-8-20-20-02, titled “Portable Fluorescent Light Inspection,” states that FPI should be performed in

accordance with manufacture manuals (such as the C-17 T.O. Manual drafted by Boeing and authorized by the Air Force):

The following information must be considered when specifying any [FPI].... Failure to observe this information can lead to unreliable inspection results.

(1) Information pertaining to surface preparation and penetrant inspection can be obtained in the following OEM documents. The following list contains examples only; other documents may be necessary for OEMs not listed here:

- (a) ***Boeing Standard Overhaul Practices Manual, 20-20-02...***
- (c) ***Pratt & Whitney Standard Practices Manual, 70-33-00...***

(Emphasis added).

121. United's Technical Manual specifies the capability of the lights and light meters that must be used to perform the FPI:

3. Special Tools and Materials

A. Special Tools

- (1) Black Light
 - (a) Ardrex Model 1025; or
 - (b) Ultra Violets Products Black-Ray B-100A

NOTE 1: Equivalent black lights may be used. Black light must be capable of producing a minimum of 1000 uW/cm² measured 15 inches from the front lens. It must be capable of producing electromagnetic radiation in the near ultraviolet range (UV-A) of wavelength 3200 to 4000 Angstrom units (320 to 400 nm). The light bulb must be filtered using an external UV filter (lens). The use of self filtering black lights is prohibited...

(2) Black Light (UV) Bulb

- (a) Par38 100W Mercury Lamp - AD Medium Skirted Base - 935-0105, H44GS-100
- (b) Par38 100W Mercury Lamp - Medium Skirted Base - 935-0124, H44GS-100/M

(3) UV/white Light Meter

(a) Ardrex DLM-1000 Radiometer with:

1. Black Light sensor

2. White Light sensor

(b) Spectronics Spectroline DSE-100X Digital Radiometer with:

1. DIX-365 sensor for UV measurement

2. DIX-555 sensor for white light measurement

122. United's Administrative/Technical Manual expressly requires all FPI to be performed with properly calibrated "White Light Meters" and "UV Light Meters":

NOTE 1: Light Meters shall be returned to the equipment manufacturer or an approved calibration lab for calibration. Light meters used with Portable Field MPI or FPI systems may be calibrated on an annual basis because of their limited usage. These meters must be identified as field units and may not be used for shop MPI or shop FPI. Identify the unit with the following: "Annual Calibration — Do Not Use For Shop FPI/MPI".

NOTE 2: UV Light Meters must be capable of measuring electromagnetic radiation in the near-ultraviolet range, where the wavelength is from 320 to 400 nm (3200-4000 Angstroms) and have an accuracy of $\pm 10\%$ at all readings or ± 50 Microwatts/cm², whichever is greater.

NOTE 3: White Light Meters must be capable of measuring incident light from zero to a minimum of 250 foot candles and have an accuracy of $\pm 10\%$ at all readings or ± 0.5 fc, whichever is greater.

NOTE 4: Any light meter that meets or exceeds the minimum equivalency requirements of Notes 2 and 3 above may be used.

H. Measure black light intensity using UV Light Meter. Black light intensity must be a minimum of 1000 uW/cm² at a distance of 15 inches measured from the front of the light filter.

NOTE 1: Black light intensity check must be accomplished at a minimum of once per shift prior to first use. It is not required prior to each use or at the job location if previously accomplished on the same shift.

NOTE 2: Battery powered black light intensity must be checked prior to each use.⁵⁶

Pratt & Whitney's F117 ENGINE MANUAL Requires "Ultra High Sensitivity" FPI

123. Pratt & Whitney's "F117-PW-100 ENGINE MANUAL" specifies the degree of sensitivity that FPI must be performed. For example, in the section of the ENGINE MANUAL

⁵⁶ Administrative / Technical Manual, NTM-UAL, SUBJECT Part-8-20-20-02 PORTABLE FLUORESCENT PENETRANT INSPECTION (emphases added)

titled “ENGINE GENERAL – LOW PRESSURE COMPRESSOR GROUP – REPAIR – 01,” under “Subtask 72-00-31-230-004-001,” it states that the technician must “Make an inspection of the 1st stage blades for cracks by SPOP [i.e., P&W Service Process Operation Procedures] 70, *ultra high sensitivity*.”⁵⁷

Pratt & Whitney Operating Procedures Require “Ultra High Sensitivity” FPI

124. Pratt & Whitney’s Service Process Operation Procedure (SPOP) 70 is titled “Fluorescent Penetrant Inspection (Local Application) Normal Or High or Ultra High Sensitivity.” SPOP 70 instructs to “[u]se SPOP 70 ultra high sensitivity penetrant on major rotating parts (that is, compressor airseals, drums, fan blades, compressor blades, hubs, disks; turbine disks, airseals, hubs, seal plates (full rings and segments) and shafts) where SPOP 70 high sensitivity penetrant is specified.” SPOP 70 further instructs that “THE UV LIGHT INTENSITY AT THE INSPECTION SURFACE MUST BE A MINIMUM OF 1000 MICRO WATTS PER CENTIMETER SQUARE AND THE AMBIENT WHITE LIGHT AT THE INSPECTION SURFACE MUST BE LESS THAN 2 FOOT-CANDLES. TOO MUCH WHITE LIGHT WILL PREVENT A SATISFACTORY INSPECTION.”

(3) United Performed FPIs for Years Without the Required Radiometer

125. From 2008 to December 2013, Relator Grant observed technicians at the MRC regularly performing FPI without any radiometer. From 2008 to December 2013, the black light used at the MRC to perform FPI was never calibrated and thus unserviceable for FPI. From 2008

⁵⁷ See Section 70-33-00, Standard Practices Manual.” (Emphasis added).

to December 2013, Relator Grant is not aware of the light meter or radiometer at the MRC at CAFB ever being sent out for calibration.⁵⁸

126. Despite not possessing a calibrated black light or FPI radiometer from 2008 to December 2013, United continued to sign off on JICs and CMTs indicating that it had completed repairs, overhauls, and inspections that required FPI with a radiometer.

127. In December 2013, after Relator Grant alerted United managers that FPIs were being performed without a calibrated light or radiometer, United acquired a new black light and sent the MRC's uncalibrated radiometer out to be certified. The radiometer was not returned to the MRC until late March 2014. Thus, between December 2013 and March 2014, the MRC was not in possession of *any* FPI radiometer.

128. The FPI radiometer's absence from the MRC was tracked using United's "TICS" and/or "Sceptre" tool-tracking systems.

129. Despite not possessing an FPI radiometer between December 2013 and March 2014, United continued to sign off on JICs and CMTs indicating that it had completed repairs, overhauls, and inspections requiring a FPI radiometer.

130. On February 19, 2014, Relator Grant had an in-person conversation with Jon Provost, United's Provisioning Coordinator, who indicated that United management was aware that the MRC had no FPI radiometer and was struggling to get one back in the facility. Among other things, Mr. Provost stated to Relator Grant:

Mr. Provost: "It appears that *we're busting our ass to get [the radiometer] back.*"

⁵⁸ From 2008 to December 2013, Relator Grant saw only one inspection technician at the MRC, Jerry Zuk, use the MRC's *uncalibrated* radiometer to perform FPI. During this time period, Relator Grant is not aware of any other technician using the MRC's uncalibrated radiometer to perform FPI.

Mr. Grant: “We need it.”

Mr. Provost: *“I know you know you need [the radiometer]. It’s manager/director level, if that tells you anything.*

Mr. Provost: *“Believe me, nobody -- nobody is short changing this. Like I said, it’s manager/director level ...*

Mr. Grant: “Wow.”

Mr. Provost: “If that tells you anything, you guys are preaching to the choir. We know *we’re trying to get [the radiometer] back by yesterday*. So everybody’s busting their ass to do it, and *when the high-ups come today, that’s one of the things we’re going to talk to them about*. So believe me, we’re doing everything that we can.”

Mr. Provost: Hey, look, Dave Van Wort [Managing Director of Maintenance/Engine Overhaul and Repair], Jim Olson, everybody is on this stuff. Jim Olson, which is the manager guy over at all the – I mean, all these guys are involved, so.

131. Later on February 19, 2014, Relator Grant had an in-person conversation Larry Barnwell, an Engineer with the F117 Program at the MRC, concerning the MRC’s lack of a radiometer at the MRC and continued performance of FPI without a radiometer:

Mr. Grant: *You know that we don’t have a radiometer for FPI?*

Mr. Barnwell: *Get one. That’s not engineering’s problem.*

Mr. Grant: *But we’ve been FPI’ing stuff without it.*

Mr. Barnwell: *We’ve been doing just fine, we spray all the time, and San Francisco does the same thing....*

Mr. Grant: *We don’t need it for any procedures?*

Mr. Grant: *I don’t know. Do we? You got something that tells me that it does?*

132. Mr. Barnwell then asked Mr. Grant: “Don’t you have anything better to do than f[***] things up here?”

133. On March 14, 2014, Repair Request # RR-F117-14-028 was signed off for “Fixed Duct Upper Beam” on Serial Number 07480. This Repair Request indicated that United recommended to “FPI for cracks” and Boeing Engineering agreed and instructed to “FPI for cracks” in accordance with “Air Force Tech Orders or Boeing standard procedures ... as required.”

134. On March 14, 2014, Steve Cadamus (Stamp #7213) signed off on a JIC checklist saying the CTR Afterbody Assembly (Serial Number 07480) had been tested using the FPI radiometer.

135. In addition, from 2008 to 2014, the MRC did not possess a black cloth or canvas to reduce ambient white light to acceptable levels. Relator Grant never saw anyone at the MRC use a black cloth or canvas when performing FPI.

b. United Falsely Certified Repairs Performed with Uncalibrated Torque Wrenches

136. T.O. 1C-17A-10 provides detailed instructions of how to assemble and disassemble the C-17 and its engine kit. These instructions frequently require the use of a specific amount torque.⁵⁹ United’s JICs, citing to certain provisions of T.O. 1C-17A-10, required the use of torque wrenches on various jobs as the requirements mandated certain parts be torqued to a precise amount. To measure this precise amount, a calibrated torque wrench was required. United’s JICs instruct technicians to use as little as 20 inch-lbs of torque for delicate components to as much as 675 inch-lbs of torque for heavy engine parts. For example, technicians assembling a “core

⁵⁹ Torque is a measure of the turning force on an object such as a bolt. For example, pushing or pulling the handle of a wrench connected to a nut or bolt produces a torque (turning force) that loosens or tightens the nut or bolt.

reverser assembly” are instructed to apply 20-25 and 30-40 inch-lbs. of torque; technicians assembling an “integrated drive generator” are instructed to apply 240-264 and 276-300 inch-lbs. of torque; and technicians installing “support brackets” on a “fan exit case” are instructed to apply 550-675 inch-lbs of torque.

137. Between 2008 and 2014, United’s MRC at the CAFB used two sets of torque wrenches, both of which were used to repair F117 engines, inlets, CTRs as required by the C-17 Technical Manual and set forth in United’s JICs.

138. The first set were silver-handled torque wrenches with blue tags and bar codes indicating certification and calibration. The second set were black-handled torque wrenches without tags indicating certification or calibration. These black-handled torque wrenches were not tracked by any tool control system. Thus, while some torque wrenches (the silver/tagged ones) were certified as calibrated, and the rest were not. For these tools, United failed to establish a tool tracking system via shadowboxing, RFID tracking, or similar system. United technicians regularly use both silver-handled and black-handled torque wrenches to perform repairs and overhauls.

139. Management was well aware of the uncertified tools on the engine shop floor, made no efforts to eradicate uncalibrated tools from the floor and willingly turned a blind eye to technician’s use of uncalibrated and uncertified tools.

140. Despite not having properly calibrated and certified torque wrenches, United required AMTs at the MRC – including Mike Acevado, Neil Barrows, Dale Boc, Mark Bradley, Mark Broyles, Paul Buenger, Jim Burnside, Steve Cadmus, Keith Eagle, David Geyer, Tim Gorman, David Grant, Ron Harrell, Bruce Mendiola, Hugo Moran, Eddie Nunez, Danny Page, Joe Paige, Ivan Rapalo, Leonard Rutman, Tom Schaner, Cory Seeber, Leon Thomason, Lester

Williams, and Jerry Zuk – to perform and sign off on the work on the JICs that called for the use of a torque wrench.

Torque Wrench Calibration Testers

141. Between 2008 and 2014, Jonathan Provost a Production Control / Provisioning Coordinator with United at CAFB was responsible for ensuring that the Torque Wrench Calibration Testers were calibrated and re-certified every 6 months.

142. Between 2008 and 2014, the CAFB facility had only four (4) Torque Wrench Calibration Testers on site. These testers were sent to an outside source for calibration and re-certification. The turnaround time on receiving a re-certified Torque Wrench Calibration Tester was approximately two weeks to one month.

143. Between 2008 and 2014, Jonathan Provost and CAFB would routinely miss deadlines for calibration and re-certification of the Torque Wrench Calibration Testers.

144. Between 2008 and 2014, CAFB would routinely send all Torque Wrench Calibration Testers out for calibration and re-certification, resulting in time periods in which there was no Torque Wrench Calibration Tester on site.

145. JICs requiring the use of Torque Wrench Calibration Testers were completed while there was no Torque Wrench Calibration Testers on site at CAFB.

c. United Falsely Certified Repairs Performed with Uncalibrated Swagers and Permaswagers

146. A swager or permaswager tool is a tool used in the manufacture of hydraulic tubes and lines by crimping metal fixtures onto the hydraulic lines. T.O. 1C-17A and the Pratt & Whitney F117-PW-100 Maintenance Manual contain numerous references and instructions concerning “swagers,” “permswagers,” “swaging tools,” “permaswage swagers,” and “swages.”

147. According to United's "General Process Manual Standard Process Manual – Mechanical," installation of externally swaged hydraulic tube connectors required specially trained and certified personnel and the use of controlled tooling.

148. According to United's "General Process Manual Standard Process Manual – Mechanical," "controlled tools must be inspected before use and must have demonstrated the ability to produce parts that meet the requirements of this specification. Stations assigned Permaswage tool and fitting kits are responsible for maintaining them in a complete and workable condition."

149. Section 3(A)(13)(h) of United's "General Process Manual Standard Process Manual – Mechanical," which provides for repairs and replacement of failed section of tubing with UA-manufactured tube segment, required any swage used for this process to produce 5500 (+/- 250) psi with the hand pump.

150. Between 2008 and 2014, United possessed a single swager tool at the CAFB facility.

151. Between 2008 and 2014, United failed to perform certification of its swager. United was required to certify the swager every six months.

152. Upon information and belief, United's failure to certify the swager extended back ten years.

153. Between 2008 and 2014, the uncertified swager tool was not capable of generating sufficient force to meet the requirements of § 3(A)(13)(h) of United's "General Process Manual Standard Process Manual – Mechanical" nor was the swager able to generate sufficient force to accomplish the required JICs.

154. Between 2008 and 2014, the uncertified swager tool was capable of generating approximately 3000 psi, approximately 55% of the required force.

155. Section 3(B)(4)(b) of United's "General Process Manual Standard Process Manual – Mechanical," which provides for quality checks on repairs made by United via a pressure test, states that "if a swaged fitting leaks, it is permissible to re-swage the fitting. If leakage continues after re-swaging, the leaking fitting must be replaced."

156. Despite not having properly calibrated and certified swager, United required AMTs at the MRC – including Mike Acevado, Neil Barrows, Dale Boc, Mark Bradley, Mark Broyles, Paul Buenger, Jim Burnside, Steve Cadmus, Keith Eagle, David Geyer, Tim Gorman, David Grant, Ron Harrell, Bruce Mendiola, Hugo Moran, Eddie Nunez, Danny Page, Joe Paige, Ivan Rapalo, Leonard Rutman, Tom Schaner, Cory Seeber, Leon Thomason, Lester Williams, and Jerry Zuk - to perform and sign off on the work on the JICs and CMTs that called for the use of a swager.

157. United also failed to perform 100% Tool Control as United failed to maintain the proper tools required to complete the jobs requiring the use of a certified swager.

158. The hydraulic lines manufactured by United with the uncertified swager would leak and were faulty and United still signed-off on them and placed them into the "serviceable" pool for use at CAFB and at other service locations around the country. United gave these hydraulic lines a Serviceable Tag that certified that the hydraulic lines were manufactured in accordance with approved manufacturing guidelines. United's use of an uncertified swager and improper procedures (such as multiple swages) rendered these Serviceable Tags false.

159. United repeatedly re-swaged lines multiple times without replacement as required by § 3(B)(4)(b).

160. Despite the failure to follow its own processes, United placed the faulty lines into production and received payment for each hydraulic line created or serviced using the uncertified swager tool, because this activity was considered “over and above” United’s base contract.

161. In a March 20, 2014 meeting, United indicated that it received payment for every additional hydraulic line produced. Specifically, Anthony Albert, Manager of Technical Operations and Government Program stated, “All I’m saying is every unit that comes through here over and above or outside the norm we’re getting paid for.”

162. Thus, any claim made to the Air Force that included work requiring the use of a Permaswager between 2008 and March 2014 was a fraudulent claim for payment.

**d. United Falsely Certified Repairs Performed with
Uncalibrated Air Ratchets**

163. Air ratchets are used to assemble the C-17’s engines and engine components. United failed to routinely calibrate and certify its air ratchets. Using un-calibrated air ratchets that do not meet the torque specifications outlined in the C-17’s engine’s maintenance manuals exposes the C-17’s engine and components to malfunction during flight operations.

164. United’s JICs required the use of air ratchets on the majority of jobs including clamping hydraulic hoses to the engine, attaching electrical harnesses, attaching pneumatics, attaching pneumatic ducts, attaching hardware to the CTR, and attaching clamps that hold sink tubes.

165. Despite not having properly calibrated and certified air ratchets, United required AMTs at the MRC – including Mike Acevado, Neil Barrows, Dale Boc, Mark Bradley, Mark Broyles, Paul Buenger, Jim Burnside, Steve Cadmus, Keith Eagle, David Geyer, Tim Gorman, David Grant, Ron Harrell, Bruce Mendiola, Hugo Moran, Eddie Nunez, Danny Page, Joe Paige, Ivan Rapalo, Leonard Rutman, Tom Schaner, Cory Seeber, Leon Thomason, Lester Williams, and

Jerry Zuk - to perform and sign off on the work on the JICs and CMTs that called for the use of air ratchets.

166. On March 27, 2014, David Dome, Senior Manager - HR Tech Ops, stated, “all shop techs are using uncalibrated air ratchets to assemble engines.”

**e. United Falsely Certified Repairs Performed with an
Uncalibrated Safety Wire / Safety Cable Gun
Calibration Tool**

167. “Safety wire is used in the aircraft to secure hardware and connectors.”⁶⁰ Numerous provisions of the T.O. 1C-17A call for the installation and removal of “safety wire” and “safety cable” according to detailed specifications. The Pratt & Whitney F117-PW-100 Maintenance Manual also sets forth “Safety Wire Procedures” for installing safety wire on the F117 engine, including to “[u]se correct tools and techniques.”⁶¹ United’s JICs also required installation of “Safety Cable” with the Safety Cable Gun on various jobs, most notably those jobs impacting the C-17’s fuel system and engine.⁶²

168. Between 2008 and 2014, Relator Grant never saw the Safety Wire Cable Gun Calibration Tool used and never saw it sent out for calibration or certification.

169. Moreover, this tool was bolted to a table, which made it difficult to remove for calibration (and shows why it was never calibrated).

170. Despite not having properly calibrated and certified Safety Wire Cable Guns, United required AMTs at the MRC – including Mike Acevado, Neil Barrows, Dale Boc, Mark

⁶⁰ T.O. 1C-17A-2-00GV-00-1.

⁶¹ F117-PW-100 Maintenance Manual, at #70-00-00, STD PRAC, Page 288.

⁶² For example, one JIC instructs to “secure No. 5 pressure tube B nut to strainer. Torque 200-225 in-lbs and safety cable with PN AS3510-0218C or Equivalent.”

Bradley, Mark Broyles, Paul Buenger, Jim Burnside, Steve Cadmus, Keith Eagle, David Geyer, Tim Gorman, David Grant, Ron Harrell, Bruce Mendiola, Hugo Moran, Eddie Nunez, Danny Page, Joe Paige, Ivan Rapalo, Leonard Rutman, Tom Schaner, Cory Seeber, Leon Thomason, Lester Williams, and Jerry Zuk to perform and sign off on the work on the JICs and CMTs that called for the use of a Safety Wire Cable Gun.

3. United Allowed Inspectors Whose Training and Eye Exams Had Expired to Continue Certifying Repairs

171. From May 2009 through October 2012, United failed to provide inspectors at the MRC with the recurrent training (such as training in non-destructive testing) and eye examinations necessary for them to sign off on inspection work – particularly as to NDT and FPI. As a result, these inspectors were not qualified to sign off on inspection work and put tags certifying that the engines and parts were serviceable or airworthy.

172. For example, Relator Grant witnessed Inspector Leonard Rutman and other inspectors asking for recurrent training from Manager John Hagerman, which was denied. Inspector Rutman reported this in an MSAP report. During the investigation of that report, United removed all inspectors from the shop floor to immediately go through recurrent training so that they could be in compliance with its contract, Air Force T.O.s, FAR 145, and the Pratt & Whitney, Boeing, and United maintenance manuals.

173. On October 3, 2013, James Arnold wrote an email to John Hagerman, Charleston Manager for Engine Overhaul and Repair, copying Thomas Chicosky, Cynthia Edwards and Juan Gomez. Mr. Arnold stated that at least four employees – Mark Bradley, Paul Buenger, David Geyer and Ivan Rapalo – had expired eye exams and were not to perform any Non-Destructive Testing (i.e., FPI).

174. Any and all JICs and CMTs on which Mark Bradley, Paul Buenger, David Geyer and Ivan Rapalo signed off on NDT while their eye exams were expired were materially false.

G. United Retaliated Against the Relator Grant

175. Relator Grant repeatedly expressed concerns to his superiors that United was not properly maintaining the C-17 aircraft engines, that he was unable to certify work appropriately that had been done due to the lack of tools and/or appropriate calibration of tools; and that employees had not received proper training or certifications.

176. In early 2014, Relator Grant also asked an engineer working on the premises whether he had ever issued a safety variance saying certain inspections of the C-17 were not necessary after realizing United did not have the correct tools to perform the inspection. Specifically, Relator Grant was concerned that there was no FPI radiometer on the premises with which to properly perform FPIs.

177. On March 5 and 13, 2014, United held investigatory meetings at the MRC attended by Relator Grant, Human Resources Senior Manager David Dome, Manager John Hagerman, Karl Mendiola, Frank Pritchett, Mike Acevedo, and Leonard Rutman. At the meetings, United discussed, among other things, Grant's observations of United's "pencil whipping," United's failure to use a radiometer for FPI, and the use of uncalibrated swagger tools.

178. In a subsequent employment arbitration proceeding on behalf of Grant, Leonard Rutman later testified about the March 2014 investigator meetings: "They are actually in shock that Dave [Grant] mentioned pencil whipping and the compliance issues ... They went from a smile to a frown." When asked if "pencil whipping" is a "serious allegation," Mr. Rutman responded: "Yes, it is. Caught everybody's attention to say the least."

179. On March 18, 2014, Relator Grant brought the use of “unserviceable” tools that did not meet the standards required by the United’s contract, and management’s knowledge of such use, to the attention of United by and through Managing Director Mark Eldred.

180. On March 20, 2014, Relator Grant wrote to Mark Eldred concerning United’s use of “unserviceable tools” and “not following maintenance procedures”:

The USAF pays us to repair their engines to certain standards. Mr. Hagerman is not covering our staffing shortages, not recertifying our techs and is directing us to use unserviceable tools to save time. Breaking these rules and not following the maintenance procedures could result in catastrophic failure to an engine. This would bring harm to the program and the contract. Ultimately there are rules and contracts we are all obligated to follow. Once again I know you’ll have a tight schedule, but we do need to discuss and come to terms on the above issues.

(Emphasis added).

181. On March 21, 2014, United informed Relator Grant they were going to terminate his employment.

182. Also on March 21, 2014, Relator Grant submitted a signed Grievance Report Form with his labor union, Teamsters Local 528:

On 3/21/14 I was fired without just cause...***I recently complained about “Safety of Flight” issues referring to pencil whipping known discrepancies on Air Force C17 Jet Engine 170Z84 and for directing CHSPD technicians to accomplishing and inspecting work with unserviceable and uncertified tools and [technicians].***⁶³

183. On April 14, 2014, Wayne Slaughter, Senior Manager, Employee Compliance, wrote to Relator Grant:

With respect to your allegations that the machine shop was operating faulty equipment and failing to train employees, we reviewed the Quality Assurance (QA) audit conducted on or about March 27, 2014. The QA team did not identify any areas of deficiency in the equipment or the training of personnel. Therefore, we were unable to substantiate your claim regarding this matter.

⁶³ David Grant, *Grievance Report Form* (Mar. 21, 2014) (emphasis added).

184. Relator Grant was also terminated as a result of his manager, John Hagerman, seeing him taking pictures of the new FPI radiometer coming back to the facility after he had complained about its lack of calibration.

185. United terminated Relator Grant on May 6, 2014.

186. Relator Grant believes that United terminated his employment because he expressed concerns about United's practices, which, as explained above, violated the False Claims Act.

187. The day he was fired, Relator Grant observed liquid fluorescent penetrant being delivered to the United's premises.

188. As a direct and proximate result of the United's conduct described above, Relator Grant is entitled to back pay, attorneys' fees and costs, and reinstatement to his previous position at the same seniority.

V. THE FALSE CLAIMS ACT

189. This is an action to recover damages and civil penalties on behalf of the United States Government and Relator Grant arising from the false and/or fraudulent statements, claims, and acts of United made in violation of the FCA, 31 U.S.C. § 3729 *et seq.*

190. Based on the relevant FCA provisions, Relator Grant, on behalf of the United States Government, seek through this action to recover damages and civil penalties arising from United's submission and/or causation of the submission of false claims to the federal government.

191. For conduct occurring before May 20, 2009, the FCA provides in pertinent part that:

- (a) Any person who:
 - (i) knowingly presents, or causes to be presented, to an officer or employee of the United States Government or a member

of the Armed Forces of the United States a false or fraudulent claim for payment or approval;

- (ii) knowingly makes, uses, or causes to be made or used, a false record or statement to get a false or fraudulent claim paid or approved by the Government ...

is liable to the Government for a civil penalty of not less than \$5,500 and not more than \$11,000 for each such claim, plus three times the amount of damages sustained by the Government because of the false or fraudulent claim. 31 U.S.C. § 3729(a) (2008).

192. The FCA defined “claim” at that time to include:

any request or demand, whether under a contract or otherwise, for money or property which is made to a contractor, grantee, or other recipient if the United States Government provides any portion of the money or property which is requested or demanded, or if the Government will reimburse such contractor, grantee, or other recipient for any portion of the money or property which is requested or demanded.

31 U.S.C. § 3729(c) (2008).

193. For conduct occurring on or after May 20, 2009, the FCA provides that any person who:

- (a) knowingly presents, or causes to be presented, a false or fraudulent claim for payment or approval;
- (b) knowingly makes, uses, or causes to be made or used, a false record or statement material to a false or fraudulent claim [except that this language applies to all claims pending on or after June 7, 2008] ...

is liable to the Government for a civil penalty of not less than \$5,500 and not more than \$11,000 for each such claim, plus three times the amount of damages sustained by the Government because of the false or fraudulent claim. 31 U.S.C. § 3729(a)(1) (2011).

194. The amended FCA defines “claim” as:

- (a) mean[ing] any request or demand, whether under a contract or otherwise, for money or property and whether or not the United States has title to the money or property, that—

- (i) is presented to an officer, employee, or agent of the United States; or
- (ii) is made to a contractor, grantee, or other recipient, if the money or property is to be spent or used on the Government's behalf or to advance a Government program or interest, and if the United States Government—
 - 1) provides or has provided any portion of the money or property requested or demanded; or
 - 2) will reimburse such contractor, grantee, or other recipient for any portion of the money or property which is requested or demanded...

31 U.S.C. § 3729(b)(2).

CLAIMS FOR RELIEF

COUNT I

For Violations Of The False Claims Act (31 U.S.C. § 3729(a)(1)(A))

195. The allegations of all paragraphs in this Complaint are incorporated by reference.

196. In performing the acts described above, United individually by and through its own acts, or through the acts of its agents, servants, officers, and employees, knowingly presented, and/or caused to be presented, to an officer or employee of the United States Government, false or fraudulent claims in violation of 31 U.S.C. § 3729(a)(1)(A).

197. As a result of United's conduct, the United States Government has been damaged in an amount to be determined at trial.

198. Additionally, the United States Government is entitled to penalties of up to \$11,000 for each and every false or fraudulent claim made or caused to be made by United.

COUNT II

For Violations Of The False Claims Act (31 U.S.C. § 3729(a)(1)(B))

199. The allegations of all paragraphs in this Complaint are incorporated by reference.

200. In performing the acts described above, United individually by and through its own acts, or through the acts of its agents, servants, officers, and employees, knowingly made, used, and/or caused to be made or used, false records or statements material to false or fraudulent claims paid or approved by the United States Government in violation of 31 U.S.C. § 3729(a)(1)(B).

201. As a result of United's conduct, the United States Government has been damaged in an amount to be determined at trial.

202. Additionally, the United States Government is entitled to penalties of up to \$11,000 for each and every false or fraudulent claim paid or approved arising from United's fraudulent conduct as described herein.

COUNT III
For Retaliation
(31 U.S.C. § 3730(h)(1))

203. The allegations of all paragraphs in this Complaint are incorporated by reference.

204. In performing the acts described above, United individually by and through its own acts, or through the acts of its agents, servants, officers, and employees, unlawfully retaliated against Relator Grant in violation of 31 U.S.C. § 3730(h).

205. Specifically, United discharged Relator Grant for engaging in protected activity pursuant to 31 U.S.C. § 3730(h). As a result of United's retaliation, as set forth in this Complaint, Relator Grant has suffered damages in an amount to be determined at trial.

PRAYER FOR RELIEF

WHEREFORE, Relator Grant, on behalf of himself and the United States Government, prays as follows:

A. That for violations of the Federal False Claims Act, 31 U.S.C. § 3729 *et seq.*, this Court enter Judgment against United in an amount equal to three times the amount of damages that

the United States Government has sustained because of United's actions, plus a civil penalty of \$11,000 for each action in violation of 31 U.S.C. § 3729;

B. That Relator Grant be awarded the maximum amount allowed pursuant to 31 U.S.C. § 3730(d), including the costs and expenses which Relator Grant necessarily incurred in bringing this action and reasonable attorneys' fees;

C. That Relator Grant be awarded all relief to which he is entitled pursuant to 31 U.S.C. § 3730(h);

D. That the United States Government, and Relator Grant, receive all relief, both in law and equity, to which he reasonably be entitled;

E. That the Court grant permanent injunctive relief to prevent any recurrence of the violations alleged herein;

F. That wrongful termination damages be awarded to Relator Grant for his retaliatory and discriminatory discharge in the amount of two (2) times the amount of back pay and benefits that Relator Grant would have earned, interest on the back pay, front pay and benefits lost, litigation costs, reasonable attorneys' fees, actual, special, and punitive damages; and

G. That the Court award such other and further relief as the Court deems appropriate.

JURY TRIAL DEMANDED

Plaintiff-Relator Grant hereby demands a trial by jury.

DATED: December 19, 2016

MOTLEY RICE LLC

/s/ William S. Norton

WILLIAM S. NORTON (D.S.C. 11343)
JAMES BRAUCHLE (D.S.C. 8014)
WILLIAM P. TINKLER (D.S.C. 11794)
28 Bridgeside Blvd.
Mount Pleasant, SC 29464
Telephone: 843/216-9000
Facsimile: 843/216-9450
bnorton@motleyrice.com
jbrauchle@motleyrice.com
wtinkler@motleyrice.com

Counsel for Plaintiff-Relator Grant

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on December 19, 2016, I electronically filed the foregoing with the Clerk of Court using the CM/ECF system, which will send a Notice of Electronic Filing to all counsel of record.

/s/ William S. Norton

WILLIAM S. NORTON